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THE THEORY AND PRACTICE OF BASIC EDUCATION IN INDIA

HARRY DHAND

No single man has left such a lengthened shadow on the educational system of India as Mahatma Gandhi, popularly called the 'Father of the Nation'. The shadow is the Basic Education, commonly termed the national system of education for India. Gandhi is more widely known, especially in the West, as a political leader and social reformer than as an educational thinker. But the indelible impact of his philosophy on the educational scene of India portrays that he has made no less great and solid contribution to the educational theory and practice in India than his contribution as a political leader.

Basic Education, sometimes called 'Nai Talim' or 'New Education', is a great departure from the traditional system of education, which is full of formalism and verbalism. It is a reaction against the glaring shortcomings of the existing setup and is an attempt to overhaul the entire educational system with a view to building up a classless society where equality of opportunity will be assured in all walks of life without any discrimination of caste, color and creed.

Principles of Basic Education

The major principles of Basic Education were first enunciated in the Conference held at Wardha on 22nd and 23rd of October, 1937 with Gandhi in the chair. These are:

(i) *Free and Compulsory Education*

Free and compulsory Basic Education should be provided for seven years from the age of seven to fourteen on a nation-wide scale to create the right and enduring type of citizenship and literacy.

(ii) *Education to Centre Around a Basic Craft*

This principle of intellectual training in and through craft is the core of this plan. All subjects, activities and training should be integrally related to a central craft, which should be chosen from the environment of the child. The craft is not taught merely for productive work but for developing the intellect of pupils. When craft is taught, its scientific aspects rather than mechanical aspects ought to be emphasized. In other words the child should be encouraged to know the why and wherefore of every process involved in craft. The stress is laid on principles of cooperative activity, planning, accuracy, initiative and individual responsibility in learning.

Craft is, in fact, to be the medium of all education and the fulcrum round which the whole curriculum is to revolve. With Ghandi the aim is not vocation cum literary training, but it is literary training through vocation that is needed and aimed at as he says,

> "the principal idea is to impart the whole education of the body and the mind and the soul through the handicraft that is taught to the children. You have to draw out all that is in the child through teaching all the processes of the handicraft, and all your lessons in history, geography, arithmetic will be related to the craft."[1]

(iii) *Self-Supporting Education*

Ghandi, realizing India's appalling poverty, suggested that education should be self-supporting. According to him the handicraft, besides developing the personality of the child, would make education self-supporting. The word self-supporting has been used in two senses. In the first place, the child after completing his course of education should be able to earn a living himself. Secondly, education is intended in itself to be self-supporting to an extent that the manual productive work of the children would meet the expenses of teachers' salaries during the total period of seven years even though during the first two years it may mean partial loss.

Ghandi claims that

> "the introduction of manual training will serve a double purpose in a poor country like ours. It will pay for the education of our children and teach them an occupation on which they can fall back in after-life, if they choose, for earning a living. Such a system must make our children self-reliant. Nothing will demoralise the nation so much as that we should learn to despise labour."[2]

(iv) *Emphasis on Mother Tongue*

Ghandi was a great champion of the mother tongue and in his scheme of education he assigned to it the position of prime-most importance. He emphasized mother tongue both as a subject of study and as a medium of instruction. Due to many defects of a foreign medium, he wanted to impart education through the mother tongue.

> "The foreign medium," according to Ghandi, "has caused a brain-fag, put an undue strain upon the nerve of our children, made them crammers and imitators, unfitted them for original work and thought, and disabled them for filtrating their learning to their family or the masses. The foreign medium has made our children practically foreigners in their own land."[3]

It is the mother tongue which will bring about precision of thought and clarity of ideas. It is a means of introducing the child to the rich heritage of his people's ideas, emotions and aspirations.

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1. M. K. Gandhi, *Basic Education* (Ahmedabad: Navajivan Publishing House, 1951), p. 10.
2. Vishwanath Sahai Mathur (ed.). *Gandhiji As An Educationist* (Delhi: Metropolitan Book Co. Ltd., 1951), p. 3.
3. Ibid., p. 3.

(v) *The Cult of Non-violence*

According to Gandhian Philosophy man is not mere mind and body but has a soul as well. Education should aim at the highest mental, physical and spiritual development. This is why his plan of education is impregnated with the cardinal creed of non-violence. It is the application of non-violence in the training of the child as a prospective citizen of the world. His scheme of education seeks to bring an age from which

> "class and communal hatred is eliminated and exploitation is eschewed ..... we cannot, will not, think in terms of exploitation, and we have no alternative but this plan of education which is based on non-violence."[4]

Curriculum

For bringing about an all round development of the child, the curriculum of the Basic Education is to be built around three integrally related centres—(i) physical environment, (ii) social environment, (iii) craftwork. All subjects are naturally co-ordinated with these centres. This gives a unity to the syllabus. Craft, as to be expected, comes to be the natural meeting point of both physical and social environments because man has conquered nature through work. Handicraft is the process by means of which the raw material is taken from nature and transformed into an object of utility for human society through man's skill and intelligence. There is, thus, hardly any field of knowledge which is not related to craft.

In Basic Education the experience is to be made the basis of curriculum. It is thus to be evolved out of the actual personal problems of living, out of the individual and group interactions going on in the neighbourhood and out of the purposeful self-activity of the children. The originators of the 'activity curriculum', as a Western would call it, have attempted to draft a curriculum to make schools places of 'work', 'experimentalism', and 'discovery'.

The subjects included in the curriculum are:

1. Basic Craft (suggested crafts are spinning and weaving; carpentry; fruit and vegetable gardening; agriculture; leather work; or any other craft for which local and geographical conditions are favourable and which has educative possibilities).
2. Mother Tongue.
3. Social Studies (including History, Geography and Civics).
4. General Science (including Nature Study, Botany, Zoology, Physiology, Hygiene and Chemistry. Physical Culture comes in connection with Hygiene).
5. Music and Drawing .

4. M. K. Gandhi, *op. cit.*, pp. 24-25.

6. Mathematics.
7. Hindustani (New Hindi—national language of India).

The course is almost the same for boys and girls up to the 5th grade—the stage up to which there will be co-educaton. In the 6th grade, the syllabus is modified to include Domestic Science for girls. This is not rigid but is varies from province to province.

Method

The system is based on the purposeful activity of the child which Dewey and other 'activists' have been recommending. There is thus unification brought about between the theoretical knowledge and its practical application. Rather it will be more pertinent to say that both go hand in hand and simultaneously. The child loves to do something with his hands and craft work provides ample opportunities for such type of activities. Moreover, the child handles the concrete objects and with the same he learns something. For example, in the case of spinning the handling of 'TAKLI' (a spinning device) takes him from the cotton plant to yarn manufacturing and ultimately to the weaving of a cloth. Thus concrete materials prepare a base of the whole knowledge.

'Correlation' is one of the most important techniques used in Basic Education. It stands for imparting education through productive manual work. The elements of curriculum are closely correlated with one another with an attempt to relate them integrally to the life and environment of the child. Moreover, the principle of correlation unifies knowledge and overcomes the possibility of its being put into water-tight compartments.

We have seen that craft is the pivot round which the Basic System of Education revolves. The following account will reveal the nature of correlation in Basic Education and how various subjects such as history, mathematics, drawing are taught with the help of a craft. Let us take 'Spinning' as the basic craft.

History:	Clothing in the early periods of civilization, different countries and their costumes, history of spinning machines, Industrial Revolution in England, Establishment of East India Company, etc.
Geography:	Climate required to grow cotton, soil suitable for growth of cotton, different aspects of weather.
Economics:	Mill-made cloth, use of machinery in preparing cloth, advantages and disadvantages of machinery.
Science:	Purification of cotton, how to strengthen the thread.
Mathematics:	Quantity of yarn spun, calculation of its price, selling of cloth.

Drawing:	Shape of Takli (spinning device), design of cloth, preparing of models of different tools.
Hygiene:	The necessity of having neat and clean surroundings.
Languages:	Recording of the activities.

It may not be possible to correlate all the subjects with one craft. Moreover, it is questionable whether all the knowledge that is worth imparting be imparted through the medium of craft. It is possible that some useful knowledge will be acquired which has no relation with the activity in hand. At the same time, it is possible that some gaps be left in the knowledge acquired through an activity. It will be the business of a good teacher to fill up those gaps. However, correlation should not be blindly and unnecessarily forced, and teaching should not only be correlated to the chosen craft but also to the child's physical and social environment, which offers equally rich possibilities.

Progress of Basic Education

After the Wardha Education Conference (held in October, 1937) a few provinces like Bombay, Madras and Bihar put this new plan of education in practice on the experimental basis. Due to World War II and other pressing political problems, Basic Education did not make much headway. However, this did not cool down the zeal of the enthusiasts of the new system of education. They again met at a Conference in 1945 and reviewed the whole situation and decided to extend its scope. During these years, although some sporadic efforts of the type were made, on the whole not much work in the domain of Basic Education could be attempted in the absence of government patronage.

It was after the achievement of Independence in 1947 that Basic Education again raised its head and came into the limelight. The new constitution had laid down as a directive principle of state policy that every effort should be made to provide universal free compulsory education to all children of six to fourteen years within ten years of its promulgation. Gandhi's Wardha Scheme of Education was approved with some modifications under the name of Basic Education. Now Basic Education is the accepted pattern of the educational system at the elementary level. Some progress has been made during the last seventeen years. A large number of basic schools have been opened by the state governments. The existing traditional primary schools are being rapidly converted to the basic pattern. The following table will show the progress made by the Basic Education.

TABLE I

BASIC EDUCATION IN INDIA*

Year	Number of Schools			Number of Students on Rolls		
	Junior Basic	Senior Basic	Post Basic	Junior Basic	Senior Basic	Post Basic
1950-51 ...	33,379	351	.....	2,846,240	66,382	.....
1955-56 ...	42,971	4,842	19	3,730,459	1,329,748	2,377
1960-61 ...	65,959	14,309	30	6,499,870	2,235,628	4,301

*Ministry of Information and Broadcasting, *India — A Reference Annual 1963* (Delhi: Publication Division, Ministry of Information and Broadcasting, Government of India, 1963) p. 72.

There are three types of Basic Schools existing at the present time. These are:

Junior Basic — Grade I to IV or V
Senior Basic — Grade V to VI or VIII
Post Basic — Grade IX to XII

Table I reveals a steady rise in the number of Basic Schools as well as the number of students in all the three types.

To assist in the programme of the development of Basic Education which has been accepted as the future pattern of education by the National Government for the age group 6-14, the Union Government has formulated an intensive educational development scheme including the facilities for the starting of Post-graduate Basic Training Colleges, Basic Training Colleges for Junior Basic Teachers. The Union Government is encouraging it in every way by offering liberal grants to switch over from traditional education to Basic Education. The emphasis at present is on introducting important features of Basic Education in non-basic (traditional) schools, orientation programs for officers and teachers to reduce differences between basic and non-basic education, development of an integrated syllabus for elementary schools and conversion of elementary teachers' training institutions to the basic type. Of course, there are several problems, academic and administrative, which are confronting Basic Education. The conversion of all elementary schools into full-fledged Basic Schools will take time and entail much effort and large financial outlay.

The National Institute of Basic Education, set up in 1956, is engaged in carrying out research and offering training and guidance to teachers and administrators of Basic Education. The National Board of Basic Education, established in 1962, advises the Union Government on programs and policies and reviews progress.

Appreciation

A close study of the system will show that it is based on most modern and sound principles of education, philosophy and psycho-

logy. It also reflects a keen aliveness to the several problems of Indian life—problems of social, cultural, political and economic life.

Psychologically, it is sound because it saves the child from the tyranny of a purely academic and theoretical instruction which was the bane of the traditional system. It also maintains a balance between the practical and intellectual phases in the child's experience. While the child is working at a basic craft or occupation, he is making use of his sense organs and physical powers. As the craft is purposeful, he is also developing powers of intellect. A stress on the craft as the medium of education brings out the importance of another principle of learning—the principle of 'learning by doing', so well known in the West. Moreover, the basic craft stimulates the interest of the child and brings into play his spontaneons activity without allowing it to run to waste or into purposeless channels.

Education should fit the child rather than the child should fit education is an education maxim accepted as early as the days of Commenius, Rousseau and Pestalozzi. Basic Education based on activity and the child study cannot be otherwise than paedo-centric. The child works at his own pace and plans and executes in his own way. His curiosities are satisfied. Since children are explained the why and wherefore of everything in a correlated manner, they actually look into facts and causes and thus develop a spirit of enquiry.

Through the craft work, there is no doubt, the constructive and manipulative instinct gets outlet. The experience of doing thrills the child and his acqusitive instinct gets satisfied when he possesses his own product. As a by-product, going through the process the teacher knows the interests, aptitudes and capabilities of the children.

While the child is engaged in a corporate activity he unconsciously acquires a spirit of give-and-take, shows initiative and drive, cultivates self-reliance—so essential in inculcating the sense of responsibility and citizenship.

Humayun Kabir stresses the same point in these words:

> "Basic Education treats the child as a member of a cooperative group. The school is an epitome of society and, in fact, each class is a miniature society. The recognition of the school as a community thus offers the most suitable atmosphere for training in citizenship. The children are taught to feel as members of one community, and as such, responsible to and for one another. Duties to others are important as one's own rights. Basic education therefore seeks to correct the modern tendency to loosen family and social ties in the name of individual liberty."[5]

5. Humayun Kabir, *Education In New India,* (New York: Harper and Brothers Publishers, 1955), p. 23.

From a sociological point of view, Basic Education will go a long way in removing the cleavage which exists at present in Indian society between the learned and the unlearned, the leisured and the labouring class and between the intellectual and manual workers. It also helps the rich and intellectual classes to appreciate the dignity of labour so much lacking at the present time.

Economically, it aims at rural reconstruction and silent industrial revolution and prepares to solve the problem of unemployment. At the same time, it provides the right kind of education to children —education to fit them for life, education suited to their environment and practical needs. Moreover, the productive labour of the young learner helps in the maintenance of his school and goes a long way in realizing the dream of education for all.

Basic Education, an educational setup based on sound psychological, pedagogical and sociological principles, will help break down another barrier which has long been prevalent in India—the barrier of caste. Thus a new social structure based on the principles of equality and justice is being built as Mr. Mohindra Singh claims,

> "Basic Education in India is essentially democratic in character. It seeks to lay the foundation of a just social order, where there is no division between the 'haves' and 'have-nots'; where an individual is treated as an end unto himself and not as a means to an end; where equality of opportunity is assured to all in all walks of life, and finally because it answers the need of millions in India who are engaged in toil and labour."[6]

Basic Education Under Fire

Basic Education has been in operation for about two decades now. Although it has been extolled to the skies, as it appears by reading the previous few pages, yet incisive criticism has been leveled against it. Some even go further in saying that it is a fad or phantasy of a philosopher pushed into education. There are others who think that the scheme is utopian in character and would fall miserably in the realm of actual practice. There is another group of 'developing critics' who feel that the scheme has been given fair trial, but it has not fared well. On the other hand, the supporters of the Basic Education claim that the adverse criticism of the system arises either out of the critics' conservatisms or a lack of correct knowledge of the working of the system. However, it is not out of place to discuss some of the defects and shortcomings of Basic Education.

Let us first examine the self-supporting aspect. The whole scheme aims at meeting the entire cost of education through the sale of finished products. This seems to be too high an ambition.

6. Mohindera Singh, "The Ideology and Practice of Basic Education in India", *The Year Book of Education—1957*, George Z. F. Bereday, Joseph A. Lauwerys, Editors (New York: World Book Company, 1957), pp. 289-290.

Preoccupied with this aspect, teachers may ignore the scholastic, cultural and artistic activities which are a potent means of self-expression and personality. Moreover, the psychological effects of this 'self-supporting' nature of Basic Education will not be very healthy. Mr. Mukerji has expressed this when he says,

> "It is feared that this novel situation will have a demoralizing effect on the entire educational organization—the teacher looking upon his pupils as bread-earning propositions, the student becoming a money-earning tool and the spinning-wheel proving more deadly than school examinations. It is also pointed out that vocational education is expensive, that expenditure on craft-work is always greater than the return and the produce of children cannot compete with finished goods from the market."[7]

Another complaint is that the instruction in Basic Education is craft-centred. It is feared that this craft accent may only produce weavers and carpenters rather than develop the whole man. Moreover, the child may be tied to a specific vocation at a premature age, before his aptitudes and interests have been ascertained. This early specialization may hinder normal development.

It is questionable whether all the subjects can be taught through the medium of craft. Correlation within reasonable bounds is educationally sound technique, but the danger is that the stipulated correlation of studies may be pushed to extremes. By some blind followers the various subjects are coerced within the limits of correlation to such an extent that this important principle of learning and teaching is reduced to a mere shibboleth.

In the era of industrialization and phenomenal technological outburst, when the machine is taking the place of hands, to the modern critic, the preaching of the use of medieval industries like spinning and weaving as the mediums of education is putting the clock of civilization back. India, a nascent democracy, looking to brighter future and the progress of industrial development, can ill afford the 'luxury' of Basic Education.

Many other snags have been pointed out in the Basic Education. They are: lack of requisite type of teachers who have special zeal, experience and temperament to perform this new and difficult task; lack of suitable text books in the field, although sincere efforts are being made to bring out new books yet it seems to be a slow-moving van; last of all but by no means least, the neglect of English in the Basic Schools.

In spite of its weaknesses and limitations, Dr.Shukla, Director, National Institute of Basic Education, sums up the impact of Basic Education on the Indian educational scene in the following account:

> "Whatever may be the limitation and difficulties faced by Basic Schools and Basic training institutions, it must be said that the movement of Basic

7. S. N. Mukerji, *Education In India—Today and Tomorrow*, (Baroda: Acharya Book Depot, 1950), p. 22.

> Education has had a very saultary effect on the educational programmes of our country at all stages. At the elementary stage we are not merely talking in terms of compulsory primary education of a meagre, ineffective uninteresting type, but of reconstructing and orienting the entire programme including the curriculum, the methods and the whole atmosphere of the primary school on the lines of basic education. Even at the secondary level the concept and practice of basic education have made an effective impact . . . . . At the University level the development of rural colleges and rural Universities, the emphasis on social service camps, apprenticeship of students of professional colleges in rural areas and the national discipline scheme through service in villages are all indicative of the influence of Basic Education programmes at the college and University level."[8]

The ideology of Basic Education may not be altogether new to the students of modern educational theory and practice both in the U.S.A. and Europe because the salient features of Basic Education such as 'learning by doing', correlation, universal and free education, education for life throughout life have long been recognized in the U.S. and Europe. But it is admitted on all hands that Basic Education has certainly ushered in a new epoch in the history of Indian education.

In conclusion, it may be added that for liquidating illiteracy from teeming millions of India, for reconstructing socio-economic life, for developing productive skills and humanitarian outlook; for inculcating certain desirable values of democratic citizenship—in short, for solving the 'Maharaja-size' problems of India, Basic Education is well underway—perhaps the destination is a bit far off and the process is a hard 'climb up' not an easy 'climb down'!

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8. J. K. Shukla, *Trends in Basic Education* (Chandigarh: Department of Extension Services, Government Post-Graduate Training College, 1961), pp. 10-11.

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EFFECTS ARISING FROM DIFFERENTIAL PRACTICES IN THE EMPLOYMENT OF COUNSELORS

WILLIAM D. DANNENMAIER
Associate Professor
University of Alberta

Directors of guidance have, for some time, shown concern with the effect that the employment of counselors in fulltime, as opposed to parttime, capacities has on teacher morale and counselor effectiveness. Although no longer a major topic in professional journals this concern continues to be demonstrated in varied employment practices. In practice some school systems employ counselors on a fulltime basis, meaning that all of their duties are within the personnel services. Others prefer to employ counselors as parttime teachers, dividing their responsibilities between the counseling of students and the teaching of academic subjects. Reasons for the regular utilization of such differential employment procedures are generally centered about the questions of teacher acceptance of the counselor and counselor effectiveness with the student.

The approach taken in textbooks on administration concerning this problem varies widely. Some authors tend to ignore the question completely. A few make statements from which inferences as to their position can be drawn. (2,4,6,8,9) Others will state the reported advantages and/or disadvantages. (1,3) Reference to empirical studies in the area are apparently nonexistent.

The Problem

Many counselors appear to accept the premise that counselors who teach will find greater acceptance by other teachers in the school. They feel this will be reflected in more referrals and in the creation of an atmosphere in the school which will be friendlier and more acceptant of counseling. A second point is frequently made concerning availability and counselor growth. The argument concerning these is that persons whose duties are concerned solely with counseling will be better able to remain abreast of current developments and they will have greater availability to the students. A counterpoint, sometimes made, is that 8 half-time counselors will have more exposure to the students than will 4 full-time counselors. The above arguments suggested the following hypotheses:

1. Part-time counselors will find greater acceptance by teachers than will full-time counselors.
2. Full-time counselors will be more effective in working with students than will part-time counselors.

The Method

The Instruments

Questionnaires were devised to measure each of the variables. The Teacher-Counselor Relationship Questionnaire was intended to elicit teacher opinions on the use of counselors in the schools as well as to permit statements concerning the use made of the counseling services by the teacher responding. The assumption was made that schools in which teachers reported referring students to the counselors and favoring the advancement of counseling could be considered as having favorable teacher-counselor relationships. Conversely if teachers did not make such referrals or indicate approval it was assumed that teacher-counselor relationships were poor. The questionnaire for students was of a more factual nature. Among other items students were asked their counselor's name, the location of the counseling office and the locaton of resource material. A basic postulate of the questionnaire was that if the student did not know his counselor's name, the location of the counseling office, and did not report talking with the counselor or referring friends or parents to the counselor the counselor could not be considered effective.

The Sample

Two schools were selected for a study on a basis of apparent similarities in all respects except that of the proportion of school time assigned for counseling to the counselors. Both schools served suburban communities which were primarily residential. School A, while approximately the same size as school B, was somewhat newer, not having an established residential area which had been in existence longer than fifteen years as did school B. Both were senior high schools, School A having, at the time of the study, a student population of 1,141 while school B had a population of approximately 1,500. In school A about 50% of the graduating seniors enrolled in a college, while in school B about 40% did so.

The pupil-counselor ratio in school A approximated 285/1: in school B the ratio was approximately 375/1. In neither school was there a basic salary difference between counselors and teachers, although in school A opportunities were provided for counselors to work an extra week in the summer for additional pay. The counselors in both schools were certified by the State of Missouri. School A employed two professional counselors, one teacher-counselor, and one temporary counselor. These categories represent differential levels of training as specified by the Department of Education. School B employed four professional counselors, two teacher-counselors, and one temporary counselor.

In school A counselor duties included counseling, course selection and, to a limited extent, scheduling. In school B counselor duties included teaching one-half time, counseling, and course choice. The single exception to this in school B being the director, who was on a full time basis. In neither school was the counselor expected to assume other duties.

The Administration

Both questionnaires were administered in both of the schools concerned in the final month of the academic year. The Teacher-Counselor questionnaire was administered, in both schools, during teachers' meetings and at a time when the counselors were not present. The teachers were informed, in each case, that neither the counselors nor the school administrators would be informed of the answers given by any individual.

In school A the student questionnaire was administered during class time and in different classrooms to the different students. In school B the questionnaire was administered during a general meeting of the seniors. Beyond this difference the situations were highly similar in both schools. Only senior students were tested, students were guaranteed the confidentiality of their responses, and no counselors were present in the rooms at the time or, or immediately prior to, testing.

Statistical Treatment

Two by two contingency tables were utilized to examine the results for the existence of any regular differences between the schools. Those in which the probability was less than that of ten chances in one hundred that such a difference had occurred by chance were considered as being significant at trends.*

Results

On the survey of teacher-counselor relationships few differences appeared between schools. In fact, the only two items on which the teachers in the two schools could be said to have differed appeared to reflect the difference in the employment of counselors. In school A, where counselors did not teach, teachers saw no need for counselors to teach the courses in psychology; and fewer teachers felt that counselors needed to teach any course. In school B, where counselors were also half-time teachers, the teachers felt that the counselors should teach the psychology courses and more teachers felt that counselors should teach.

*Yates correction factor was applied when the lowest expected frequency in any of the tables fell below 5.

TABLE I

RESULTS OF TEACHER-COUNSELOR QUESTIONNAIRE ACCORDING TO SCHOOL

Items	School	Yes	No	X^2	P
1. I frequently refer students to the counselor.	A	21	28	.09	.80
	B	23	27		
2. I have discussed with a counselor the role of counseling in the schools.	A	26	23	1.22	.30
	B	32	18		
3. The counselor has a greater need for a private office than does the classroom teacher.	A	43	6	.29	.70
	B	42	8		
4. The counselors should have a somewhat higher pay scale than the classroom teachers.	A	4	45	.0006	.99
	B	3	47		
5. I have occasionally discussed a problem concerning myself with the counselor.	A	13	35	.01	.95
	B	14	36		
6. A counselor needs to spend his free time in advancing his skills and knowledge in counseling and guidance.	A	43	6	.33	.70
	B	41	8		
7. Counselors should have the responsibility of teaching courses in psychology and sociology in high school.	A	9	40	28.71	.001
	B	36	14		
8. I feel that the counselor has helped me to understand certain students.	A	37	12	.06	.85
	B	38	11		
9. Counselors need continuing teaching experience.	A	37	11	3.25	.10
	B	46	4		
10. All counseling should be the responsibility of the teacher.	A	2	47	.16	.70
	B	4	45		
11. I usually refer parents to the counselor when questions involving their children are not specifically appropriate to my subject.	A	34	14	.26	.70
	B	31	16		
12. A counselor should be proficient in some academic field appropriate to high school teaching.	A	44	5	.001	.98
	B	46	4		
13. I sometimes refer to the counselor students whom I feel I could help to some extent but who would receive more assistance from the counselor.	A	40	9	.08	.80
	B	38	12		
14. Counselor and teacher training are about the same and consequently there is no real need for the employment of counselors as such.	A	2	46	.001	.98
	B	4	45		

In the Knowledge of Counselor questionnaire senior students were asked to record such items as the name of their counselor, the location of educational and vocational materials and what they considered to be the counselor's duties. Certain of the questions could be answered with a yes or no. Of 17 possible differences seven were significant. In school A, where counselors devoted full-time to counseling, more students knew the name of their counselor, and more students reported that they had visited their counselor voluntarily and read occupational literature. In school B, where counselors taught half time, more students considered scheduling a counselor duty, more knew where educational information was kept and

more reported having read educational literature. (There was no difference between the schools in the gaining of ideas from educational literature.)

TABLE II

REPORTS CONCERNING COUNSELORS BY SENIOR STUDENTS IN EACH OF TWO HIGH SCHOOLS

The Student:	School	Yes	No	%Yes	X^2	P
1. Felt the counselors had been helpful.	A	94	6	92	1.67	.20
	B	79	10			
2. Had referred a friend to the counselor.	A	72	28	74	.84	.50
	B	68	21			
3. Knew the name of his counselor.	A	100	.....	97	3.78	.10
	B	84	5			
4. Reported he had visited his counsellor on his own.	A	98	2	95	3.29	.10
	B	81	8			
5. Felt his counselor was interested in him.	A	91	9	90	.27	.70
	B	79	10			
6. Had discussed personal problems with his counselors.	A	30	70	29	.083	.80
	B	25	64			
7. Knew where job information was kept.	A	65	35	63	.19	.70
	B	55	34			
8. Had read literature about occupations.	A	82	18	65	26.75	.001
	B	41	48			
9. Had received new ideas from these.	A	54	46	45	6.99	.01
	B	31	58			
10. Knew where educational information was kept.	A	69	31	77	7.09	.01
	B	76	13			
11. Had read educational information.	A	70	30	76	3.696	.10
	B	73	16			
12. Had received new ideas from these readings.	A	31	69	30	.071	.80
	B	26	63			
13. Had had his parents talk with his counselor.	A	19	81	23	2.18	.20
	B	25	64			
14. Felt these discussions had helped him.	A	24	76	26	.41	.70
	B	25	64			
15. Felt the counselor duties were those of general aid to the students, including help with personal problems.	A	49	51	44	1.78	.20
	B	35	54			
16. Felt the counselor duties were to include course selection.	A	59	41	59	.063	.90
	B	52	37			
17. Felt the counselor duties were to include things of a technical nature, i.e. scheduling, record keeping and testing.	A	39	61	46	3.621	.10
	B	47	42			

Summary and Conclusions

Counselors do not appears to be differentially accepted by teachers on a basis of whether or not their workday consists solely of counseling duties or includes teaching assignments. The teachers in both of the schools studied appeared to have essentially the same feelings towards the counselors. Those differences which existed conformed with the official school policy.

When the effectiveness of the counselors was implied from the student knowledge of details concerning counseling and from student

reports as to their percepts of counselors there were, however, several differences to be noted. In that situation in which counselors devoted full-time to counseling duties more students knew the name of their counselor, and more students reported that they had visited their counselor voluntarily, read occupational literature and received new ideas from reading occupational literature. In the school in which counselors taught as well as counseled more students considered scheduling and record keeping as a counselor duty, more knew where educational information was kept and more reported reading it.

The differences between the schools in counselor effectiveness might be partially explained through the more favorable student-counselor ratio in school A. Against this explanation, however, is the general argument that two counselors, with partial teaching duties, will have greater contact with students and, consequently, greater effectiveness than would one counselor with full time counseling duties. Also of interest is the more academic direction which counseling appears to have when counselors are teaching as well as counseling. Again this might be explained by the fact that more students in the school in which this was true attended college than did students in the school in which counselors were solely responsible for counseling duties. This difference would not, however, explain the lack of differences between the schools in the reported gaining of new ideas.

The results of this study would tend to refute the hypothesis that counselors whose duties include the teaching of academic subjects, have better professional relationships than do counselors who do not have academic responsibilities. The hypothesis that full-time counselors are more effective in counseling than are half-time counselors is supported by the study.

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A DESCRIPTIVE SUMMARY OF AN EXPERIMENT ON ANIMISM AND ARTIFICIALISM IN THE THINKING OF SELECTED GRADE I CHILDREN

BRUCE CAMERON AND GEOFFREY A. SMITH

Statement of the Problem

In Piaget's book *The Language and Thought of the Child,* the author hypothesizes that the child's cognitive structure — the kind of logic his thinking possesses — is expressed in the language he uses. To think, Piaget states, is to deal with words. (19, p. 86) A subsequent book, *The Child's Conception of the World,* investigated more thoroughly the content of children's thinking. Piaget shows that the content of children's thinking is concerned more with particular ideas and beliefs than with the more generalized forms of logic which facilitate such ideas and beliefs. His conclusions about thinking in young children are based on a number of clinical experiments conducted with children in a Geneva private school. In his experiments, Piaget took two major precautions —

1. a methodological precaution, whereby he attempted to ensure that the questions asked in the interview were similar to the spontaneous kinds of questions that children themselves ask.
2. an interpretive precaution, whereby he avoided interpreting the child's answers as evidence of highly systematized ontologies or cosmologies. (9, p. 280)

His study was concerned with three types of intellectual tendency on which children's thinking is predicated—realism, animism, and artificialism. The general theme that underlay his findings of all three aspects was that in children's thinking there is a basic undifferentiation between self and the world. This study is concerned with only two of these aspects—animism and artificialism. In animistic type thinking there is a failure on the part of the child to differentiate the qualities of life and consciousness between animate and inanimate objects. In Artificialistic thinking the child believes that all objects and events in the world are created to suit the purposes of human beings. This he fails to acknowledge the existence of natural phenomena in their own right.

In the very young child—up to 5 years—there are strong elements of both primitive animism and diffuse artificialism (to use Piaget's terms) which can be attributed to the fact that up to this age the child has not concerned himself very much with naturalistic

*The investigators are grateful to Dr. R. J. C. Harper for his valuable suggestions and constructive criticisms.

logical or scientific explanations of phenomena. He is quite content with phenomenistic and magical explanations of the world. As the child's intellectual capacities develop and he moves from the intuitive stage to that of concrete operations, he is no longer satisfied with phenomenistic and magical explanations. He begins to build up an intellectual systemization which slowly replaces his egocentric thinking of early childhood.

This shift in mental orientation takes place very gradually, and Piaget found that varying degrees of animism and artificialism persist in the child's thought until he reaches the stage of formal operations around 11 or 12 years. During the process of conversion the child's pattern of thinking passes through a number of different stages. With regard to animism, Piaget identifies four stages—

Stage I — The child associates life and consciousness with everything that is active, even if stationary. (Up to 6 or 7 years.)

Stage II — The child associates life and consciousness with those objects that can move. (Ages: 6 or 7 to 8 or 9.)

Stage III — The child associates life and consciousness with those objects than can move of their own accord. (Ages: 8 or 9 to 10 or 11 years.)

Stage IV — The child associates both life and consciousness with animals, and life only with plants. (Age: 10 onwards.)

The extent of artificialism can also be differentiated into four stages, three of which influence the child's understanding of causality, and one of which occurs at the precausality stage. These stages are—

Precausality stage — *diffuse artificialism*—"nature is conceived as being controlled by men, or at least as centering around them." (19 p. 370) (Up to age 5 or 6)

Stage I — *mythological artificialism*—creation in nature is attributed to direct manufacture by human or divine agency. (Age: 5 or 6-7)

Stage II — *technical artificialism*—the general disposition of things continues to be attributed to man, but man's activity is limited to things that are technically feasible. (19 p. 373) (Age: 7-9 or 10)

Stage III — *immanent artificialism*—man ceases to be responsible for manufacture in nature. The detail of phenomena can be interpreted in terms of natural phenomena. (Age: 9 or 10 onwards)

Piaget's findings are based on his experiments with children in the rather restricted environment of a private school in Geneva, and on replications of his experiments by former students in Paris and Barcelona. Since his publication of *The Child's Conception of the World* in 1929 other researchers have examined the problem, sometimes imitating Piaget's procedures and sometimes introducing innovations. The interest of the present researchers is attracted to the question of determining to what extent Piaget's findings are applicable to a small group of children in a modern Edmonton suburban elementary school.

Related Research

The reported research which was found to be significant to this study was almost entirely on animism. This interest stems from the time *The Child's Conception of the World* was translated into English. When Susan Isaacs (13) made a critical review of the book in 1930, she felt that either the ages for the stages were too high or that the children were below normal in intelligence. She argued that social experience was as large a factor as any sort of 'inner ripening'. How else could a child know 'how the moon began' unless he was taught it? Isaacs believed that children at these ages did show a great deal of understanding of causality, and were not as egocentric as Piaget suggested in his writings. Her biggest criticism was that animism was not a characteristic cognitive structure in childhood, but could be revealed in people of all ages if they were challenged beyond their organized experience and faced with the unknown. Under these circumstances many people become subjective and display egocentric thought. The sequential arrangement of stages may be valid, but should not be considered absolute.

Isaacs also attacked the clinical method. Egocentricism exists in daydreams, but adults have sufficient organized knowledge to resist being pushed into fantasy, whereas the child is unable to resist with his limited knowledge. The suggestiveness of the questions was also scrutinized closely. For example, the question "Where does the sun come from?" sets the child's mind in a certain direction and limits its scope. In summation she felt that the psychologist must offer problems which are real to the child and find ways to measure the child's best performance of them if he is to state the limits of ability in terms of age.

Further replications of Piaget's study followed. Russell and Dennis (24) came up with a standardized procedure for measuring animism in order to avoid the drawbacks of the clinical method and to make statistical treatment possible. Their method involved the use of pictures of twenty different themes, such as a broken

dish, clouds, grass, a mirror and a stone. Questions then revolved around these themes and were fairly objective in nature. Russell (22) also found stages of animism had a correlation of .62 with chronological age and .59 with mental ability. No significant difference was detected between the stages of animism and geographic location, socio-economic status or the sex of the subject. Russell also checked the child's knowledge of concepts relating to life as Piaget had done. Half of the children were asked "Does the (. . .) know where it is? . . . . . Why" and the other half of the group were asked "Does the (. . .) feel it when I touch it? . . . . . Why?" He found a 63 percent correspondence between the stages of animism and the stages of allied concepts. From this study Russell concluded that animism was descriptive of the child's ideas of life.

Wayne Dennis (5) following Russell's procedure tested Hopi children aged 12 to 17. He found that they were mainly Stage I and II of animism and that there was a progression between the stages on the basis of age. The results seemed to be due to the influence of a culture in which animism was present in the adults too.

Another study by Dennis and Mallinger (6) used the same procedure on 36 residents of old age homes. Each participant was over 70 years old and had previously made a score of at least 100 on the Terman-Merrill intelligence test. In answering the questions 75% of the senescents gave 'immature answers', which were almost identical with those of children under the age of 12 years. These results, it was suggested, showed a return to childhood concepts—probably due to declining mental ability.

It will be noted that none of the preceding studies, apart from disputing the hard and fast ranges of Piaget, quarrelled seriously with his concept of animism. Certain other researchers did.

The earliest critical experiments were organized by Huang and Lee (12) who asked forty Chinese children about ten objects, They asked not only whether the object was living, but if it had 'life', and asked five other questions allied to animism, such as "Could it feel?" The results indicated that an object without life is said to be alive only sporadically. More children responded to the question "Has it life?" than to the question "Is it living?" The researchers thus concluded that the distinction between living and not living is grasped gradually.

Klingberg (15) tested 97 Swedish children using the Huang method. To the questions "Is it living?" and "Has it life?" he obtained results similar to Huang's in the ranking of objects with regard to frequency of endowing 'life' and 'living'. Like Huang, he also found there were more correct answers to the question 'Has it life?' As Isaacs had suggested earlier, Klingberg also felt that the growth of

knowledge is the basis for classifying objects into living and non-living categories.

Klingensmith (16) tested 30 subjects from each of the following grades, K, 1, 3, 5 and 7. Using eight objects—a burnt match, a broken dish, a comb, a pocket knife, an alarm clock, lighted candles, a flower and a goldfish—he asked about each object in turn whether it was alive. Then eight other questions, involving the presence or absence of such sensory or functional attributes as thinking, breathing, seeing, hearing and talking, were asked. The question—"Is it alive?" was then repeated. He found that the affirmative replies were cut by more than half on repetition of the question. He could find little to indicate that there was misinterpretation of the nature of the objects after the child had entered school. Basically his study indicated that children have a much narrower definition of 'alive' than adults.

Another interesting and critical study of animism was conducted by Crowell and Dale (3). This followed up a study by Dennis (5) and another by Crannel (2), both of which showed that college students as well as children attribute properties of life to inanimate objects. Crowell and Dale modified Dennis' procedure into a questionnaire, which they administered to 225 college students, and checked the results against each student's aptitude and year of college. The students were asked to state 'Yes' or 'No' and 'Why?' when asked whether the following objects were alive—an unlighted match, a lighted match, clouds, stars, and several others. Three other questions involving consciousness were also given.

e.g. This pearl was once in a shell in the sea. When the water moved, could the pearl feel the movement of the water?

A scoring system was devised whereby a completely negative answer received 0 points, while a positive, doubtful, or omitted answer was given 1 point. On this basis the researchers concluded that 70% of the students showed some measure of animism. Traces of animism were found in 79% of the freshmen, in 70% of the sophomores, and in 61% of the upperclassmen. When animism was matched with aptitude, the educational level of the student was not found to be significant.

The most comprehensive summary of the research into Piaget's position an animism, and into the work of his critics, is provided by Jahoda (14). He was primarily concerned with reviewing the research on animism on a cross-cultural basis. A comparison was made between research on animism in white American children by Lerner (17), Russell (23), and Deutche (8), in American Indian children by Dennis (4), Dennis and Russell (7), and Havighurst and Neugarten (10), in Chinese children by Huang and Lee (12), in European

children by Asker (1), and Klingberg (15), and in children of the Manus in New Guinea by Mead (18). Most of the studies confirmed Piaget's contention that animism is influenced by the principle of indissociation, by the principles of introjection, by participation, by moral obligation, and by language. However, not all the findings supported Piaget or each other, and the reviewer was forced to conclude, that, on a cross-cultural basis

1. some of the responses of most younger children are marked with animism,
2. the proportion of such responses decreases with increasing age.

He observed further than animsim cannot be measured with quantitative uniformity.

Purpose of the Study

This study was concerned with ascertaining, through the use of the clinical procedures devised by Jean Piaget and others, the degree of animism and artificialism in the thinking of Grade I children of an Edmonton elementary school.

Definitions

Animism—

the attribution of life or consciousness to inanimate objects.

Artificialism—

the belief that all objects and events in the world were made by men for specific anthropocentric purposes. (9, p. 281)

Questions

1. To what extent do selected children in Grade I exhibit animism in their patterns of thinking?
2. To what extent do selected Grade I children exhibit artificialism in their patterns of thinking?

Sample

The principal of the Edmonton elementary school involved in this study was asked to select three students from each of three Grade I classes. The only criterion for selection was that the students represent a fairly wide range of ability, measured by intelligence test scores. The students actually selected had intelligence quotients ranging from 146 to 67 on the Detroit Beginner's Test.

Procedure

It was decided for the purpose of this study to replicate the clinical procedures of Jean Piaget as outlined in his introductory chapter of *The Child's Conception of the World.* These procedures involved individual interviews with the children, using the spon-

taneous type of question that a child may himself ask another child. The questions for this particular study were selected from Piaget's book largely on the basis of frequency of use by Piaget. The use of a timer and a candle were innovations introduced by the present researchers on the basis of a similar study by Klingensmith (16). The use of a cork was adapted from Piaget (19, p. 346) and the use of an electric flashlight was original. These instruments were used as models for questioning the children about qualities of life or consciousness in inanimate objects.

The individual interviews were tape-recorded so that

1. the researchers could analyse the responses of the children in more detail during replays of the interviews,
2. selected interviews could form the basis of discussion on animism and artificialism in children's thinking in the Educational Psychology 570 class.

The actual tape-recording of the interviews was done on Monday, February 8, 1965, in the afternoon at an Edmonton elementary school. The list of questions to be asked was submitted before the experiment to a senior administrative officer of the Edmonton Public School Board for official approval.

Permission to interview the selected Grade I students in the school involved was obtained from both the principal of the school and the Deputy Superintendent of EPSB, to whom grateful acknowledgement is made.

Limitations

1. This experiment involved only a small number of students.
2. Only students in Grade I were interviewed.
3. The only other data collected, in addition to the content of the interviews, were the intelligence quotients and ages of the students.
4. It is recognized by the present researchers, and reiterated several times by Piaget in his writings that children cannot be allocated to the various categories or stages on a fixed or absolute basis. Children sometimes give responses that suggest they are at a more advanced stage than they actually are. Similarly, under certain circumstances, children may lapse into an earlier stage through which they have actually passed. For the sake of simplicity children were allocated in this experiment to that stage which represented their most dominant mode of thinking.

Findings

A short assessment of the degree of evident animism and artificialism for each child interviewed is given.

Boy A. I.Q.—146, age 6-2.

This boy answered all questions quite confidently. His explanations of the characteristics of the sun, the moon, the flowers, and other phenomena were almost all naturalistic. The following sequence of questions and answers illustrate this conclusion. The boy's answers are *italicized.*

"Why is it cold in winter?" *Because the earth is a long way from the sun.*
"How did the sun begin?" *I think . . . God made it.*
"Is the sun alive?" *No* "Why?" *Because it is not an animal.*
"What is the sun made of?" *Fire.*

In those cases where this boy was uncertain about an answer, he would admit that he did not know rather than 'invent' an answer, as children at the early stages of animism might. Only one of his answers suggested a trace of animism. This answer concerned the question about life in the flashlight. He seemed to have difficulty deciding whether electrical energy was life in the normal sense of the word.

"What about this light (the flashlight), is it alive?" *It looks alive.*
"Why?" *The light seems to be like an eye blinking.* "Is it alive?" *No, I don't think so . . . I guess it isn't.* "Why?" *Because it works by batteries for one thing.*

Although the boy was at, or close to, the final stage of animistic thinking, his ideas on the origin of certain natural phenomena do show distinct artificialistic tendencies. For him, the source of life for most living things is divine creation. It is not known whether he is influenced by any religious instruction, but it seems likely.

Girl B. I.Q.—121, age 6-10.

This girl answered many of the questions well, but there was a certain vagueness about her answers on occasions. Many of her answers suggest animistic thinking, but when questioned more closely about the activity and movement stages of animism, her responses were negative. This would imply that she is at the stage of spontaneous movement in animistic thought, and two of her responses confirm this hypothesis.

"Is the sun alive?" *The sun is alive if it moves.*
"Is a bicycle alive?" *No, but it can move.*

These, however, are the only responses of this kind and do not provide conclusive evidence of the degree of animistic thinking of this girl. Many of her responses were prefaced by such comments as 'I think . . .' or 'Well, it is kind of . . . ' She distinctly associates life with walking, seeing, feeling and moving, but is resitant about attributing these properties to non-animal objects.

Little evidence was obtained of artificialism in this girl's thinking.

Boy C. I.Q.—96, age 6-2.

This boy answered most questions cautiously, but produced some answers that show distinct signs of animism and artificialism in his thinking. For him, life is strongly associated with movement.

"Is a bicycle alive?" *When it moves.*
"It this timer alive?" *Yes.* "Why?" *Because the hands can move.*

A number of similar responses indicate that his thinking about life and nature is animistic to a large degree, but not entirely so. Non-moving things are not alive.

In explaining the origin of most phenomena, this boy finds the solution to the problem in divine creation. The hand of a divine being is seen behind the origin of snow, clouds, smoke, and the sun. This implies that he is still at the first stage of artificialism (mythological) in Piaget's categorization.

Girl D. I.Q.—120, age 6-6.

It was difficult to assess the degree of animism in this child's thinking as many of her answers seemed to be due to romancing. Certain natural phenomena are endowed with life-like characteristics, e.g.

"Can the sun see at night?" *No, because it is not even around.*
"Where is it?" *It's under the clouds and it's gone to sleep.*

but the basis for this type of thinking is neither general activity nor general movement. A clear differentiation is made between the living and the inert. However, a number of lapses into almost primitive animism, such as the example given below, make it difficult to classify this girl according to Piaget's stages.

"Is a stone alive?" *No . . . if it is the kind of stone that grows into a flower, it will be.*

Boy E. I.Q.—98, age 6-8.

The responses of this boy show fairly conclusively that he is still at the early stages of primitive animism and of diffuse artificialism. Most things are alive, to him, because of the function they perform. Some typical answers are

"Is the sun alive?" *Yes.* "Why?" *Because it's got to go round the world.*
"What makes it go round the world?" *God.*
"Why does the night come?" *So you can have a sleep.*
"Is this stone alive?" *Yes.* "Why?" *God makes him alive.*

There is a high degree of egocentricity in this boy's approach to an intellectual systemization, e.g.

"What makes it snow?" *It snows so that we can play in the snow.*

The movement and origin of most objects are attributed to some divine power and this boy apparently has not yet investigated the technical and mechanical aspects of even such simple objects as a pen or a flashlight.

Girl F. I.Q.—67, age 6-11.

This girl exhibited the highest degree of animism and artificialism of those interviewed. Almost every object was given life-like characteristics. She produced some almost classical Piagetian responses, as the following sequence illustrates.

"When you go out for a walk, what does the sun do?" *It follows you.*
"What does the sun do if you stop walking?" *It stops too.*

Not only are most objects thought of animistically, but, in some cases, they are considered almost human

"Does the sun know when the weather is fine?" *Yes.* "How does it know?" *"Because he can see everything. When it's cloudy out he knows it's cold.*
(Despite the suggestive nature of the first question, the girl's responses to the second part was absolutely spontaneous.)

When asked whether she thought the stone, the timer and the flashlight were alive, this girl answered positively each time. Furthermore the girl associated the objects strongly with human intentions. According to Piaget, this style of thinking is the result of considering the origin of natural phenomena in human or divine terms. This girl responded many times in this way.

Boy G. I.Q.—109, age 6-4.

The responses of this boy were clearly influenced by religious teaching. The origin of the sun, the world, and 'all that therein is' was distinctly attributed to God. By implication, the failure of this child to examine more naturalistic and mechanical explanations of the origins of certain objects places him at the first level of artificialistic thinking.

His responses to the questions concerned with consciousness or the state of life in objects suggested that he has arrived at the stage of associating life with movement (Stage II of Animism). His answers in the following sequence are indicative of his thinking.

"Is a bicycle alive?" *No.* "Why?" *Because it's just a toy.*
"Is a car alive?" *If you turn the key, if you make the gears go .*(Yes)
"Is it alive?" *Yes.*
"What are clouds?" *They're smoke.* "Is fire alive?" *Yes.*
"Is a bicycle alive?" *No, but when you pedal it, it's alive.*
(This question was repeated to check the consistency of the boy's answers.)

Boy H. I.Q.—106, age 6-11.

This child responded to the questions rather quietly and may have been a little overawed by the situation. However, from his answers it is apparent that this child has been influenced by previous teaching. Although he did not have a spontaneous answer for several questions, he would seek an answer in naturalistic terms. This was not always possible, and then he would lapse into animism. It seems evident that animistic thought in this child has declined considerably, but that occasionally he resorts to animism. Similarly

his responses do not show a high degree of artificialism either. He is inclined to regard some phenomena, such as day and night, in terms of their functionality to man, and hence governed by man. This, however, is not an absolute condition, and it would seem proper to place this child at the technically artificialistic stage.

Girl I. I.Q.—95, age 6-11.

This girl would appear to be still at the first stage of artificialism, and in transition between stages I and II or animism. She strongly associates movement with life, and while not attributing feeling or knowing to phenomena like the sun and the moon, she does believe that a candle can feel its own warmth, and that a stone feels pain when pricked.

"Is a stone alive?" *Yes.* "Why is a stone alive?" *I don't know.*
"If you were to stick a pin in a stone, if you could, would it feel it?" *Yes.*
"Is this (flashlight) alive?" *Yes.* "Why is it alive?" *Because it flashes.*
(Light was flashing at the time.) "If I turn it off, is it alive?" *No.*

This child was very hesitant about her replies, and her confidence needs bolstering.

Summary

The table given below summarizes the findings of the interviews. Its chief purpose is to provide a brief summary of the pertinent information. No statistical procedures were adopted for two reasons—

1. the size of the sample was too small to provide valid correlations, and
2. other researchers (14, 25) have found animism and artificialism cannot be measured with quantitative uniformity.

TABLE I

THE DEGREE OF ANIMISM AND ARTIFICIALISM IN THE THINKING OF EACH CHILD IN RELATION TO AGE AND INTELLIGENCE QUOTIENT

	Animism	Artificialism	Age	I.Q.
Boy A.	low	medium	6-2	146
Girl B.	low	I	6-10	121
Boy C.	high	high	6-2	96
Girl D.	medium-low	low	6-6	120
Boy E.	high	high	6-8	98
Girl F.	high	high	6-11	67
Boy G.	medium	high	6-4	109
Boy H.	medium	medium	6-11	106
Girl I.	high-medium	high	6-11	95

Legend—High — indicates the child is at Stage I of animism and artificialism.
Medium — indicates the child is at Stage II of animism and artificialism.
Low — indicates the child is at Stage III or IV of animism and Stage III of artificialism.
I — indicates insufficient information.

Conclusions

Though the responses of the students were not analysed to discover the number of times animism and artificialism appeared in the child's thinking, one or two trends seem apparent from the partial analysis made. These trends support the general thesis of Piaget's theory on animism and artificialism, as well as lending support to the hypothesis put forth by Dennis (5), which is discussed in the related research. The trends noted by the present researchers were—

1. Most children, while in the process of replacing egocentric and primitively animistic patterns of thought with an intellectual systematization, continue to retain animistic modes of thinking to a certain degree.
2. Children are not necessarily at the same stage of both animistic and artificialistic types of thinking at the same time.
3. Children often exhibit thinking at two or more different stages of Piaget's categorization during the same interview.
4. Though animism and artificialism are invariably complementary in the early stages of intellectual development, animism tends to decrease at a faster rate than artificialism.
5. There seems to be a moderate inverse relationship between the degree of animism in a child's thought and his intelligent quotient, which is possibly more significant than the age factor in relation to stages.

Educational Implications

1. When teaching science concepts in Grade I, and possibly Grade II, consideration should be given to the fact the degree of animism in a child's pattern of thinking may interefere with complete understanding of the concept.
2. Elements of animism in children's thinking may be capitalized on by the Grade I or II teacher in developing creativity in such subjects as art, poetry or story-telling.
3. Identification of animism and artificialism in children's thought may assist the Grade I or II teacher to diagnose the conceptual difficulties of some of the less-gifted children.
4. As artificialism seems to decline at a slower rate than animism in children's thought, more difficulty may be experienced in understanding the scientific origin of natural phenomena than in understanding the operations and effects of natural phenomena. This would imply that teaching about the origin of a natural object should be deferred until children understand how an object works, and what effect it creates.

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INTELLIGENCE, MANIFEST ANXIETY AND SCHOLASTIC ACHIEVEMENT*

Barry P. Frost
University of Calgary, Alberta

Because intelligence tests either do not predict sufficiently well (Woodrow, 1946; Rapier, 1961; Vernon, 1955), or are made up of much the same content as the criterion to be predicted (Coleman and Cureton, 1954), many investigators have searched for other factors which might be used in a multiple regression equation to predict scholastic achievement.

One of the more promising factors appears to be that of "manifest anxiety", whether in its "general" or "test" form. However, the evidence seems rather conflicting. Morgan et al., using the Children's Manifest Anxiety Scale (CMAS), report that high achieving fifth grade girls are more anxious than their low achieving classmates, but that the opposite relationship was true of sixth grade girls. They found no significant relationship in the case of the boys. Crandall et al. (1962), working with children in the early grades, found a negative correlation between CMAS and achievement in the boys but a positive one with girls. Feldhusen and Klausmeier (1962) report a negative correlation between CMAS and achievement for low to average IQ children. Phillips (1962), using the same test, found a negative correlation for all except lower class boys in the seventh grade. Alone among these investigators, Cox (1960) reports a curvilinear relationship between general and test anxiety (Mandler-Sarason tests) and achievement.

The present studies constitute an attempt to discover the true relationship as far as Canadian children are concerned.

First Study

The first study was carried out with 55 fourth grade children (26 boys and 29 girls), aged nine years, at a Calgary, Alberta elementary school drawing from a middle class area.

The CMAS, Safran Culture Reduced Intelligence Test (SCRIT) (Safran, 1960) and California Achievement Test (Reading and Arithmetic sections) were administered to the children and the teachers' marks for the basic subjects collected.

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*I should like to thank Mr. Geiger and Dr. Safran of the Calgary Public School Board and the two school principals concerned for the help without which this study could not have been carried out.

The SCRIT was used as it is a test whose validity relies on internal learning (i.e. learning how to cope with the symbols and relationships used), but which has not direct verbal or arithmetic content.

Two sources of achievement scores were utilized—(a) the California Achievement Test, Form W, Grades 4-6, Reading and Arithmetic sub-test totals, and (b) the teachers' marks for silent reading, language, arithmetic, and general standing (overall grade) entered on the children's record card. Strictly speaking, the relationships of the variables were co-variational rather than predictive.

It was hypothesized that there would be:—

1. a negative relationship between CMAS scores and academic achievement scores and
2. a positive relationship between SCRIT scores and academic achievement.

Results

Hypothesis one was supported in this study. There were consistent negative correlations between the CMAS and the various measures of scholastic achievement in both boys and girls. However only five of the twelve coefficients (Pearson Product-Moment) reached the 0.05 level of significance.

Hypothesis two was strongly supported as SCRIT correlates significantly with all achievement variables.

SCRIT and CMAS together yield multiple correlation coefficients which are slightly larger than SCRIT alone.

The full range of relationships are as set out in Tables I - III.

TABLE I

INTER-CORRELATIONS
FOURTH GRADE BOYS (N=26)

			California Achievement			Grades		
	SCRIT	CMAS	Read.	Arith.	Read.	Lang.	Arith.	Overall
SCRIT	.....	—10	66*	38*	46*	62*	66*	66*
CMAS		.....	—37*	—40*	—26	—24	—25	—29
Cal. Ach. Read.			.....	65*	85*	84*	84*	90*
Cal. Ach. Arith.				.....	57*	57*	70*	64*
Reading					.....	78*	77*	84*
Language						.....	88*	93*
Arithmetic							.....	92*

Decimal points are omitted.
*Significant at the 0.025 level or better (one tail test).

TABLE II

INTER-CORRELATIONS

FOURTH GRADE GIRLS (N=29)

	California Achievement				Grades			
	SCRIT	CMAS	Read.	Arith.	Read.	Lang.	Arith.	Overall
SCRIT	.....	—19	32**	45*	54*	52*	70*	62*
CMAS		.....	—36*	—18	—35*	—28	—15	—34**
Cal. Ach. Read.			.....	51*	69*	70*	50*	71*
Cal. Ach. Arith.				.....	55*	45*	51*	59*
Reading					.....	72*	48*	68*
Language						.....	81*	88*
Arithmetic							.....	80**

Decimal points are omitted.
*Significant at the 0.025 level or better (one tail test).
**Significant at the 0.05 level or better (one tail test).

TABLE III

MULTIPLE CORRELATIONS*

	Read.	Arith.	Read.	Lang.	Arith.	Overall
Boys	75	52	52	65	68	70
Girls	45	48	59	55	70	66

*SCRIT and CMAS together give the multiple correlation coefficients shown in table 3.

Second Study

The second study was carried out with 113 sixth grade children (63 boys and 50 girls), aged eleven through twelve years, from two elementary schools in Calgary. One of the schools (School A) is largely middle class (artisan to professional), the other working class (unskilled and skilled workers), and lower middle class, in composition.

The CMAS and a short form of the La Forge-Suczek Adjectival Check List (La Forge and Suczek, 1955) designed by the writer, were completed by the children. They had already taken, as part of school routine, the California Short Form Test of Mental Maturity (CTMM) and the Stanford Achievement Test. Teachers' marks for the basic subjects were also available, and these latter and the median percentiles of the Stanford Achievement Test, were used as the scholastic achievement criterion scores.

It was hypothesized that there would be:—

1. a negative relationship between CMAS scores and scholastic achievement scores,

2. a positive relationship between the Dominance score derived from the adjectival check list (see Leary, 1957) and scholastic achievement scores, and
3. a positive relationship between CTMM and scholastic achievement scores.

Results

Hypothesis one was again supported though, as in the first study there were several non-significant coefficients.

The relationships found for the total sample (see Table 6) were such that CMAS was significantly and negatively correlated with the Stanford Achievement Test (Median Percentile) and teachers' marks in language and arithmetic as well as overall grade. The coefficients were all of very low magnitude.

Hypothesis two was supported as the Dominance scale was positively related with all achievement scores, though significantly so only with language, arithmetic and overall teachers' marks. The scale was significantly and negatively correlated with CMAS.

Hypothesis three was also supported, as might be expected; CTMM was positively correlated with all achievement measures, the coefficients ranging from 0.45 (arithmetic mark) to 0.67 (Stanford Achievement Test).

It should be noted that the various measures of achievement tended to correlate more highly among themselves than they did with CTMM: the teachers' mark for language being the best predictor of overall grade and the teachers' reading mark the best predictor of the Stanford Achievement Test score.

The addition of CMAS to CTMM gives multiple correlation coefficients (for the total sample), which are no significant advance on the predictive power of the CTMM alone. Nor is the addition of the Dominance score to CTMM of much greater effect.

Contrary to the finding of Cox (1960), there was no curvilinear correlation between CMAS and achievement (Stanford Test).

Correlation ratios (etas) were calculated for the CMAS and Stanford Achievement Test scores with respect to the total sample and for boys and girls separately. The results were as follows:

sample		*eta*	*r*
Girls	:	0.29	—0.19
Boys	:	0.42	—0.22
Total	:	0.35	—0.20

None of these correlation ratios is significantly different from the correlation coefficients (by the epsilon-prime squared test).

Phillips (1962) reports six conclusions:

1. The IQ was more highly correlated with achievement for males than females.
2. The IQ was more highly correlated with achievement for middle class than lower.
3. The IQ was more highly correlated with objective tests than teacher grades.
4. Females had higher achievement than males.
5. Middle class pupils had higher achievement than lower class.
6. Low anxiety pupils had higher achievement than high anxiety pupils.

Our results support findings number five and six, but not findings one, two and four. In fact the relationships found in our study are quite opposite to those expressed in Phillips' second findings. With respect to number three, this proposition was true of grade 4 but not grade 6.

But perhaps the most important of Phillips' results was that lower class males did not show the negative correlation between CMAS and achievement shown by other groups. The present results lend some support to this finding. The correlation coefficients between CMAS and the various measures of achievement of the boys of School B are much lower than those of the other groups.

TABLE IV

INTER-CORRELATIONS
SIXTH GRADE BOYS (N=63)

					Grades			
	CTMM	CMAS	Dom.	Stan. Ach.	Read.	Lang.	Arith.	Overall
CTMM	.....	—16	07	66*	52*	65*	49*	64*
CMAS		.....	—26*	—22**	—09	—25*	—19	—17
Dominance			.....	13	07	20**	10	17
Stan. Ach.				.....	66*	70*	54*	69*
Read.					.....	66*	52*	74*
Lang.						.....	70*	91*
Arith.							.....	79*

Table V

INTER-CORRELATIONS
SIXTH GRADE GIRLS (N=50)

					Grades			
	CTMM	CMAS	Dom.	Stan. Ach.	Read.	Lang.	Arith.	Overall
CTMM	.....	—06	—03	73*	67*	59*	45*	64*
CMAS		.....	—43*	—19	—16	—15	—20	—26**
Dominance			.....	13	09	21	32*	31*
Stan. Ach.				.....	83*	75*	68*	80*
Read.					.....	65*	53*	79*
Lang.						.....	69*	89*
Arith.							.....	82*

Table VI

INTER-CORRELATIONS
SIXTH GRADE TOTAL SAMPLE (N=113)

					Grades			
	CTMM	CMAS	Dom.	Stan. Ach.	Read.	Lang.	Arith.	Overall
CTMM	.....	—11	01	67*	55*	56*	45*	59*
CMAS		.....	—35*	—20*	—12	—18**	—19*	—20*
Dominance			.....	13	08	21*	19*	24*
Stan. Ach.				.....	74*	71*	60*	74*
Read.					.....	66*	53*	77*
Lang.						.....	69*	90*
Arith.							.....	80*

Table VII

FOURTH GRADE
MEANS AND S.D.s.

	California Achievement				Grades			
	SCRIT (Raw Score)	CMAS (Raw Score)	Read. (Raw Score)	Arith. (Raw Score)	Read.	Lang	Arith.	Overall
Boys Mn	30.50	17.00	77.31	49.00	8.04	7.54	7.31	7.38
S.D.	2.78	5.94	17.54	7.16	2.34	3.05	2.88	2.88
Girls Mn	29.27	20.14	76.10	45.62	8.27	8.07	7.55	7.90
S.D.	3.60	6.83	13.19	9.15	1.96	1.89	2.24	2.02

Table VIII

SIXTH GRADE, SCHOOL A MEANS AND S.D.s.

	CTMM I.Q.	CMAS (Raw Score)	Dominance (Stand. Score)	Stan. Ach. Median %	Grades			
					Read.	Lang.	Arith.	Overall
Boys Mn	120.03	16.72	50.09	60.00	9.66	9.03	9.24	9.00
S.D.	11.09	6.11	11.11	16.80	2.02	1.99	2.51	1.77
Girls Mn	113.48	16.17	51.17	60.58	10.03	10.07	9.65	9.79
S.D.	13.62	8.42	10.22	19.50	2.07	2.29	2.26	1.95

Table IX

SIXTH GRADE, SCHOOL B MEANS AND S.D.s.

	CTMM I.Q.	CMAS (Raw Score)	Dominance (Stand. Score)	Stan. Ach. Median %	Grades			
					Read.	Lang.	Arith.	Overall
Boys Mn	108.60	18.57	49.83	31.40	6.87	7.20	7.83	7.40
S.D.	12.55	5.79	8.00	19.41	1.87	2.77	3.29	2.50
Girls Mn	103.90	20.09	50.19	29.95	7.24	8.14	7.95	7.67
S.D.	10.51	8.46	9.72	19.47	2.14	2.34	2.40	2.03

Table X

SIXTH GRADE (BOTH SCHOOLS COMBINED) MEANS AND S.D.s.

	CTMM I.Q.	CMAS (Raw Score)	Dominance (Stand. Score)	Stan. Ach. Median %	Grades			
					Read.	Lang.	Arith.	Overall
Boys Mn	114.59	17.60	49.97	46.38	8.33	8.16	8.57	8.24
S.D.	13.12	6.03	9.76	23.05	2.40	2.56	2.99	2.29
Girls Mn	109.46	18.16	50.76	47.72	8.86	9.26	8.94	8.90
S.D.	13.28	8.75	10.02	24.67	2.51	2.50	2.47	2.25
Total Mn	112.32	17.85	50.31	46.97	8.57	8.65	8.73	8.53
S.D.	13.43	7.36	9.88	23.79	2.47	2.60	2.78	2.30

Discussion

There seems little doubt that, at the fourth grade level, there is a negative relationship between manifest anxiety, as measured by the CMAS, and scholastic achievement, whether the latter is measured by standardised tests or by teachers' marks. Though not all coefficients reached the required significance level, they were all in the predicted direction.

The various measures of achievement correlated more strongly among themselves than they did with SCRIT.

Some of the correlations between SCRIT and achievement are also surprisingly low: for example, with California Achievement-Arithmetic (Boys) and California Achievement-Reading (Girls) These results are due to the narrow variance of the achievement scores in those subjects and groups and the SCRIT itself which does not appear to discriminate well enough at the higher levels of intellect. Nevertheless, SCRIT predicts achievement in most areas as well as more complex tests which are usually contaminated with verbal and arithmetic content.

In the sixth grade groups, as in the case of the fourth graders, there are consistent negative relationships between CMAS and the achievement measures. But same situation holds with the Dominance scale, though in the opposite direction.

The small magnitude of the coefficients, however, might lead one to doubt whether the CMAS and Short Form adjectival Check List have any value other than as a first screening device. It would certainly appear that there are important factors present here but perhaps more sophisticated measures are needed to get at them. It cannot be said that either scale is of any practical use in the improvement of prediction of achievement by intelligence tests.

It continues to be true that the best predictor of an achievement measure is usually another achievement measure.

One finding which throws some light on possible reasons for low achievement in those whom we expect to achieve well, or conversely on high achievement in those whom we expect to achieve at a moderate or low level, on the basis of measured intelligence, was obtained when the two schools were compared. Eighteen boys from School A were paired with eighteen from School B on the basis of their CTMM IQs. The mean Stanford Achievement Test score (median percentile) for the school A group was 63.55, the mean for the school B group was 37.66. The S.D.s were 16.40 and 16.80 respectively. Sixteen pairs of girls were similarly compared. The mean for school A was 52.87 (S.D. 19.91), that for school B 32.18 (S.D. 17.61).

Cultural differences mediated by home and school presumably play a large part in the production of these large discrepancies. Differences in standard of teaching probably play some part but this is unlikely to be the major factor.

But whatever relationships are found to be statistically significant, we have eventually to consider the individual case. Why it is, for example, that the boy J.C., in school A, who scores the highest on Stanford Achievement, goes completely against the trend to score one of the highest CMAS and lowest Dominance scores? Or why does the boy J.T., with an IQ of 125, the lowest CMAS score, and a high Dominance score, obtain below average achievement scores? The moderate CMAS score of 18 does not help us to understand J.S. who, with an IQ of 138 obtains a Stanford Achievement Test median percentile of 35. Perhaps his low dominance score of 36 indicates a lack of confidence, but this score is higher than that of J.C. above.

Should not we use the intellectual and personality instruments that we have been discussing, to delineate sub-groups which should then be intensely studies? In other words let us spend less time on the *prediction* of criteria and more time on those other aspects of science, *control* and *explanation.*

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THE RELATEDNESS OF DIVERGENT AND CONVERGENT THINKING*

A. J. Cropley
University of New England
N.S.W., Australia

Psychologists and educators have recently begun to place great emphasis on the concept of creativity, since it is argued on the one hand that man's creative faculties restore his dignity in a computer-dominated age (Bruner, 1962), and on the other, that human creativity is mankind's greatest asset (Toynbee, 1962). Torrance (1963) has also suggested that the proper exercise of creative talents is important in maintaining mental health.

There is increasing agreement that conventional tests are concerned mainly with the ability to reproduce the already known rather than the capacity to "invent and innovate" (Guilford, 1950). However, a number of writers (Guilford, 1950; Lowenfeld, 1958; Getzels and Jackson, 1962; Torrance, 1963) have suggested that there are, in fact, two distinct aspects to intellect which may appropriately be labelled "convergent thinking" and "divergent thinking" (Guilford, 1950). Conventional intelligence tests are usually held to be useful measures only of the first kind of capacity and to ignore the second kind, which may even be inhibited (Getzels and Jackson, 1962; Torrance, 1963) in the classroom, with its emphasis on finding 'correct' answers.

However, as Burt (1964, pp. 13-15) has pointed out, there is no complete agreement among theorists as to whether there is a separate intellectual capacity appropriately labelled 'creativity' or divergent thinking. Burt's view is that individual differences in scores on divergent thinking tests result more from differences in 'general ability' than from differences on some separate and distinct intellectual skill appropriately identified by the label 'creativity'. Vernon (1964) has suggested that the usefulness of conventional tests could be extended by adding divergent thinking sub-tests to them.

Although the Getzels and Jackson (1962) study is frequently cited as supporting the notion of two distinct and independent kinds of thinking, many of the correlations between their divergent thinking measures and the test of conventional IQ were larger than correlations within the battery of divergent thinking tests. Furthermore, factor analyses of the Getzels and Jackson correlation matrix

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(1962, p. 20) carried out by both Thorndike (1963) and Marsh (1964) indicated that, although there was a factor defined by the divergent thinking measures, this factor owed much of its variance to the tests of convergent thinking.

In fact, many studies have indicated the existence of significant correlations between divergent and convergent thinking. Getzels and Jackson (1962, p. 5) reported correlations ranging from .02 (Andrews, 1930) to .27 (Welsh, 1946), while they obtained correlations ranging from .131 to .378 (1962, p. 20) from their own data. A number of other recent studies have reported significant correlations between divergent and convergent thinking (Meer and Stein, 1955; Ripple and May, 1962; Richards, Cline and Needham, 1964), while Ketcham and Kheiralla (1962), in comparing scores on the WISC, the Stanford-Binet and the Primary Mental Abilities Test with scores on a battery of divergent thinking tests, obtained 54 out of 64 correlations significant beyond the .05 level.

Taylor (1964) has summarized the relationship between divergent and convergent thinking by pointing out that although correlations may be very low, or even negative, when samples are homogeneous with regard to either variable, selection of heterogeneous samples usually leads to significant correlations. Vernon (1964) has extended this point by suggesting that the two may become independent once some minimum IQ level (threshold) has been reached.

The purpose of the present study was to examine the relationship between scores on tests of convergent thinking and tests of divergent thinking obtained by a sample of Edmonton schoolchildren. The major question which the study sought to answer was: Are divergent thinking and convergent thinking really substantially independent of each other as some authors have suggested, or do the two kinds of thinking overlap?

Method

Sample

The sample consisted of the entire Grade Seven population of a large metropolitan Junior High School. Of 354 children enrolled, 320 completed the entire test battery. The full sample, whose mean age was 13 years 6 month with a SD of 16.9 months, (range—11 years 1 month to 16 years 1 month), had a mean verbal IQ on the appropriate Lorge-Thorndike test of 114.3 (range—79 to 150; SD =14.5). The sample included 170 boys, for whom the mean verbal IQ was 114.7 (range—70 to 148; SD=15.2), while the corresponding figure for the 150 girls was 113.8 (range—88 to 150; SD=13.6). The mean age of the boys was 13 years, 10 months, (SD=16.6 months; range—11 years 1 month to 16 years 1 month), and of the girls 13

years 2 months (SD= 17.3 months; range—11 years 7 months to 16 years 1 month).

Tests

Tests employed in the study included the appropriate levels of the Lorge-Thorndike tests of verbal and non-verbal intelligence. Scores were also obtained on the following 5 measures of divergent thinking—Seeing Problems; Tin Can Uses; Consequences; Symbol Production; Circles. In general, these tests were taken from the work of Guilford (French 1963) although Tin Can Uses and Circles have been revised and developed by Torrance (1962).

Procedure

The tests were all administered on the same day and in the same room to the 320 subjects, who had been gathered in the school gymnasium for that purpose. Administration was according to the published specifications (French, 1963; Torrance, 1962), while scoring was for originality in all cases except Symbol Production, where total number of appropriate symbols was recorded as a subject's score.

Correlations between the various measures were calculated for the full sample, for the 170 boys alone, and for the 150 girls alone.

Results

The intercorrelations between the various tests of divergent thinking and the two measures of convergent thinking are shown in Table I, for the full sample.

TABLE I

CORRELATIONS BETWEEN CONVERGENT AND DIVERGENT THINKING

	Seeing Problems	Tin Can Uses	Consequences	Circles	Symbol Production
Verbal IQ	362*	194	351	145	263
Non-verbal IQ	303	231	350	171	302

*all decimal points have been omitted.

With 318 degrees of freedom, the critical value of the correlation coefficient for significance at the .01 level is .145. Hence, it can be seen that every one of the corelations obtained in the case of the full sample, was significant at or beyond the .01 level of confidence.

Correlations obtained using the boys' data only are shown in Table II.

TABLE II

CORRELATIONS BETWEEN CONVERGENT AND DIVERGENT THINKING

(BOYS ONLY: N=170)

	Seeing Problems	Tin Can Uses	Consequences	Circles	Symbol Production
Verbal IQ	306*	103	333	259	288
Non-verbal IQ	323	174	405	247	369

*all decimal points have been omitted.

With 168 degrees of freedom, the critical value of the correlation coefficient for significance at the .01 level is .198. Hence, it can be seen that 8 out of 10 boys' coefficients are significant beyond the .01 level of confidence.

Girls' correlations are shown in Table III.

CORRELATIONS BETWEEN CONVERGENT AND DIVERGENT THINKING

(GIRLS ONLY: N=150)

	Seeing Problems	Tin Can Uses	Consequences	Circles	Symbol Production
Verbal IQ	406*	264	365	064	253
Non-verbal IQ	290	281	312	133	253

*all decimal points have been omitted.

In this case (df=148) the critical value of the correlation coefficient for significance at the .01 level is .210. Again, 8 of 10 coefficients obtained are significant beyond the .01 level of confidence.

Discussion

Almost all correlations between the two tests of convergent thinking and the five measures of divergent thinking intercorrelated significantly. Hence, the present data do not support the notion that convergent thinking and divergent thinking are completely independent aspects of intellect. In this respect, they are consistent with other studies which have reported significant correlations between convergent and divergent thinking.

Theorists too have stressed the essentially overlapping nature of the two kinds of thinking. Maslow (1954) argues that, although some kind of coding (convergent thinking) is essential to handle the masses of incoming stimuli which the individual processes, creativity involves the capacity to master and go beyond conventional ways of coding data. A similar point has been made by Pribram (1964, p. 107) who points out that there is no neurological basis for regarding convergent and divergent thinking as separate processes, but that divergent thinking arises out of convergent thinking. Finally, in a

similar vein, Gordon (1961, p. 9) stresses the importance of thorough knowledge of basic material, pointing out that the 'moment of insight' described by Ghiselin (1955, pp. 29, 30) can only arise out of a thorough knowledge of the field, a knowledge acquired, clearly, through the exercise of convergent thinking.

Hence, the data obtained in this study suggest that the relationship between divergent thinking and convergent thinking may be summarized in the following way. The two skills represent overlapping aspects of intellectual functioning which probably interact in creative productions. Divergent thinking may well arise out of convergent thinking, which constitutes a base on which higher level activity rests.

In this conception, the correlations between divergent and convergent thinking are seen as reflecting the extent to which convergent thinking underlies divergent thinking, either as some kind of threshold as Vernon (1954) has suggested, or perhaps as a necessary precursor to divergent activity. Nevertheless, correlations between the two kinds of tests do not account for more than a small portion of their respective variances. To the extent that scores on tests of divergent thinking are not predictable from conventional tests, divergent thinking may be regarded as a separate aspect of intellect not sampled by the kinds of measures most often used in assessing students' potential. That these aspects of intellect are worth measuring and are important to the teacher is made apparent by the fact that conventional IQ tests usually account for only about one quarter of the variance of achievement measures (Getzels and Jackson, 1962, p. 2).

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CURRICULUM AS A FUNCTION OF LEARNING

Arthur G. Storey
Faculty of Education
University of Alberta, Calgary

Problem

The present study was designed to test the supposition that a 'pattern for writing" approach to the teaching of language is superior to a relatively traditional approach at the junior high school level. The criterion of superiority was defined as a differentiation of skill in written language.

In December, three Calgary Junior High Schools were randomly selected from an alphabetical listing of the total number of such schools in the city. The principals of these schools were asked to supply the names of two Grade VII and two Grade VIII language teachers who had equally skilled classes in English and who would be willing to take part in an experiment in written language. The six Grade VII and six Grade VIII teachers and classes thus obtained were assigned randomly to provide six experimental and six control classes in each grade. In this way each of the three schools chosen provided an experimental and a control class in each of the two grades.

On January 3 and 4, half of the classes taking part in the experiment were randomly selected and given the *Cooperative Sequential Tests* of Educational Progress, Writing 3B[1] plus the following essay topic:

> If you knew that you were to go blind twenty-four hours from now and that nothing could prevent it, what would you do with the time between now and this time tomorrow, when you could see no more? Where would you go? What and whom would you try to see?
>
> Write an account of what you would do from the time you leave this room until your blindness strikes, explaining, if possible, the reasons for your actions.

On the same dates the other half of the group was given form 3A of STEP Writing test, together with the following essay topic:

> If you knew you were to inherit a million tax free dollars at the end of June and were to lose what was left of it plus all of the material things you bought for yourself at the end of one year, what would you do? Where would you go? What would you try to see?
>
> Write an account of what you would do from the end of June until one year was up, explaining, if possible, the reasons for your actions.

The essay instructions for both essays were given to the teachers as follows:

1. Distribute a single sheet of foolscap to each pupil.

2. Have the pupils write their names ,school, grade and class identification on the *centre* of it in *ink*. Impress on them the necessity for legibility.
3. Have the pupils turn the sheet over.
4. Distribute the enclosed essay topic.
5. Read the topic aloud while the pupils follow.
6. Say "I want you to respond to this topic on the blank side of the sheet of paper you have been given. Write only on this side of the paper. Write legibly. Use a pen. Think about what you will say before you begin to write. You may not recopy what you write. In thirty minutes I will ask you to hand in your papers."
7. At the end of thirty minutes collect the papers.

Following the testing, all materials were collected from the teachers and those assigned to the experimental classes were given sufficient grade-appropriate copies of Dashwood-Jones, D., *Patterns for Writing*[2] for themselves and their pupils. The textbooks currently is use were collected. The teachers were asked to make no changes in the time alloted, homework assigned, motivation provided or other aspects of their language program except the substitution of textbooks, and therefore the curriculum. All teachers concerned were asked to avoid informing their pupils that an experiment was in progress. Control teachers were asked not to consult or discuss the *Patterns for Writing* texts.

For validity and reliability purposes none of the tests were scored until after the termination of the experiment.

TABLE I

SUMMARY OF STEP TEST RESULTS

Score Interval	Control Group Scores		Experimental Group Scores	
	January	June	January	June
53-55	0	1	4	0
50-52	4	6	5	4
47-49	14	15	12	16
44-46	18	20	10	16
41-43	20	24	15	24
38-40	31	19	22	18
35-37	17	26	22	22
32-34	17	17	17	28
29-31	12	11	15	9
26-28	15	14	15	14
23-25	12	11	16	9
20-22	7	9	13	4
17-19	4	1	1	4
14-16	3	0	2	1
N	174	174	169	169
$\bar{X}$	35.76	36.81	34.90	36.41
s	8.67	8.30	9.00	8.00
Gain		1.05		1.51
t of gain	1.14 (not sig.)		1.62 (not sig.)	
Diff. Gain*				.46
t of diff. gain			.54 (not sig.)	

*Differential gain favors the experimental group but is not different from chance.

On June 3 and 4, or exactly twenty weeks, or one half of a school year, after the first testing both groups were again tested. The procedure was identical to that followed in January except each group now took the tests it had missed earlier.

Following the second period of testing the STEP tests were hand scored using the publisher's keys. Table I summarizes the results.

Before the essays were scored they were code marked so they could again be assembled into their original folders. They were then shuffled together for purposes of randomization and handed to an independent language teacher who scored them against the following revision of the Alberta Department of Education Grade IX final examination key in language.

PARAGRAPH EVALUATION

	Maximum	Student's Score
Total Impression	5	
Sentence Variety and Effectiveness	8	
Diction	4	
Unity and Coherence	3	
* BASIC MARK	5	

Sub-Total .....

DEDUCTIONS				
Spelling @1	5			
Grammar @1	5			
Sentence Structure @1	7	Fragment		
		Run-on		
		Modifier		
		Other		
Word Usage @1	4			
Punctuation @½	3			

Total Deductions .....

Final Score .....

Table II summarizes the results of this scoring of the essays.

TABLE II

SUMMARY OF KEY MARKED ESSAYS RESULTS

Score Interval	Control Group Scores		Experimental Group Scores	
	January	June	January	June
33-35	1	1	1	5
30-32	1	11	5	15
27-29	9	22	11	20
24-26	26	25	17	29
21-23	47	49	30	28
18-20	37	25	40	23
15-17	29	17	24	19
12-14	7	6	15	10
9-11	2	5	10	7
6- 8	4	2	11	5
3- 5	1	1	1	1
0- 2	1	1	0	3
N	165	165	165	165
$\overline{X}$	20.07	21.75	18.80	21.51
s	4.96	5.67	6.06	6.96
Gain		1.68	2.71	
t of gain		2.86 (Sig. $>$ .01 level)	$t = 3.76$ (Sig. $>$ .01 level)	
Diff. gain*			1.03	
t of diff. gain			1.48 (not sig.)	

*Differential gain is again in favor of the experimental group but is not different from chance.

When the essays were "key" marked they were reshuffled, returned to the author without his being informed of the grades they had received. He then graded them against models based on those provided by the publisher of the *STEP* Essay 3 tests. Table II summarizes the results.

During July, 1963 the present author had the task of teaching "Utility and Creative Writing to a group of 22 Division II and III Manitoba teachers. He had each member of this group grade 30 of the essays selected randomly. The instructions were:

> "I want you to grade these papers as fairly as you can. Do not consider mechanics of language but only the skill with which the ideas are presented. Pretend the essays were written by your own class and mark them as fairly and as consistently as you can. Read all of them first and sort them into H. A, B, C, and D piles then go through them again and award them marks in multiples of five."

TABLE III

SUMMARY OF MODEL MARKED ESSAY RESULTS

Score Interval	Control Group Scores January	Control Group Scores June	Experimental Group Scores January	Experimental Group Scores June
89-95	0	0	1	1
82-88	6	3	3	4
75-81	12	14	13	18
68-74	17	22	14	19
61-67	21	35	37	34
54-60	31	37	29	40
47-53	22	14	27	34
40-46	16	22	27	8
33-39	11	6	3	1
26-32	11	4	6	2
19-25	13	4	2	2
12-18	1	2	2	1
5-11	3	1	1	1
N	164	164	165	165
$\bar{X}$	52.39	57.13	56.07	59.67
s	18.63	14.85	14.52	13.11
Gain		4.74		3.60
t of gain		2.55 (Sig. > .02 level)		2.25
Diff. gain*		1.14		(Sig. > .03 level)
t of diff. gain		.74 (not sig.)		

*Differential gain is in favor of control group but is not different from chance.

Table IV summarizes the results of this marking.

TABLE IV

SUMMARY OF TEACHER MARKING OF ESSAYS

Score Interval	Control Group Scores January	Control Group Scores June	Experimental Group Scores January	Experimental Group Scores June
88-95	5	5	6	4
80-87	17	21	14	22
72-79	12	13	20	17
64-71	26	41	38	37
65-63	23	19	23	28
48-55	27	27	25	33
40-47	20	22	18	13
32-39	5	3	4	2
24-31	17	5	9	4
16-23	6	0	4	0
8-15	5	5	1	2
0- 7	1	3	3	3
N	164	164	165	165
$\bar{X}$	54.82	59.45	58.80	61.39
s	20.29	18.86	18.68	15.98
Gain		4.63		2.59
t of gain		2.15 (Sig. > .05 level)		1.29 (not sig.)
Diff. gain*		2.04		
t of diff. gain		1.34 (not sig.)		

*Differential gain is again in favor of control group but is not different from chance.

Discussion

The results given in Table I not only fail to refute the null hypothesis (the hypothesis that the differential gain made in favor of either group would not be significantly different from zero) but indicates that the test was not sensitive enough to detect the absolute gain made by either group—it being reasonable to assume that there would be some gain in written language skill over a five month instruction period at the Grade VII and VIII levels.

The key marked essay results given in Table II indicate an absolute gain for both groups, but like the STEP test results fail to differentiate between these gains. The essays, when marked against models (Table III), duplicate the results shown when key marked except that the absolute gains were not as pronounced and the differential gain favored the control group. The teacher marked essays (Table IV) attribute a significant gain to the control group but fail to show a significant gain for the experimental subjects. And, as in the three earlier tables, the differential gain was not found to be significantly different from chance.

Conclusion

The Calgary study, then, failed to provide any evidence to support the supposition that the use of the Dashwood-Jones, D., *Patterns for Writing* text in lieu of a more traditionally oriented text will in and of itself affect written language skill at the Grade VII and VIII levels.

REFERENCES

1. *Cooperative Sequential Tests of Educational Progress,* Handbook for Essay Tests Level 3.
2. *Patterns for Writing,* Gage and Company, Toronto, 1962.

IN-GROUP ORIENTATION AND SELF-CONCEPTIONS OF INDIAN AND NON-INDIAN STUDENTS IN AN INTEGRATED SCHOOL*

Baha Abu-Laban
American University of Beirut
Lebanon

A companion paper published elsewhere[1] reported data concerning the acculturative change of Canadian Indian students in a desegregated public high school in a suburb of Edmonton, Alberta. The relative influence of the family structure and the normative climate of the school on acculturation into white middle class values was discussed.

The present paper reports findings concerning the social adjustment of Indian and non-Indian students in the same high school. Specifically, the pattern of inter-ethnic relations and the self-attitudes of the subjects will be examined. In the school studied, the Indian children, constituting approximately 7 per cent of a total of about 700 students, were the only significant minority group. Under the sponsorship of the Indian Affairs Branch of the Canadian Department of Citizenship and Immigration, these children were seeking education away from their reserves. The vast majority of them were boarding at an Indian residential school from which they commuted daily to their high school.

Although there were no indications of racial conflict in the school studied, the hypothesis was originally made that the Indian children would retain their ethnic identity. The basis for this hypothesis is the assumption that ethnic identifications will not be weakened under conditions, such as the above noted, which tend to heighten the social visibility of minority group members and to enhance intra-group interaction.[2]

Method

Interviews were held with a total of 95 students enrolled in the high school under study in the spring of 1962.[3] About one-half of the subjects constituted the Indian student population at the school, and the remainder were selected by a stratified random procedure to match them with the Indian subjects.[4] Approximately 5 out of 10 respondents were enrolled in Grade 10, 3 out of 10 in Grade 11, and 2 out of 10 were enrolled in Grade 12. Also, about one-fourth of the subjects were female.

The interview schedule was designed to yield information on, among other things, the respondents' friendship relationships and

subjective definitions of identity. Information on selective association was obtained by responses to three sociometric questions: (1) who are your three best school friends? (2) If you had the opportunity, with whom else would you like to be friends? and (3) Name three students whom you like least in the school. The self-attitudes of students were determined by responses to the question "Who am I?" where each respondent was requested to list ten statements which best described himself.[5]

Results

Selective Association. The friendship patterns among the Indian and non-Indian students were generally in-group oriented. The major difference between the two groups lay in the fact that over one-fourth of the Indian boys and girls named as best friends classmates of a different sex, whereas the non-Indian children's best friends were predominantly of the same sex. Additionally, in response to a question about individuals with whom the respondents, if given the opportunity, would like to make friends, approximately 55 per cent of the Indian children made no specific choices, 17 per cent selected other Indians as desired friends, and the remainder cast their sociometric choices across ethnic lines. In this connection, it is interesting to note that desired friendships, whether in-group or out-group oriented, were with children of the same sex. In comparison 46 per cent of the white children made no specific choices, and the remainder of the group would like to befriend schoolmates of similar ethnic background and mostly of the same sex.

In response to the request to name three students whom the subject liked least in the school, approximately 3 out of 10 Indian as well as non-Indian children indicated that they did not dislike any schoolmates. However, about 45 per cent of the Indian children liked least certain non-Indian schoolmates, while only 6 per cent of the latter liked particular Indian children least. Contrariwise, approximately 25 per cent of the Indian children liked least certain other Indians, while 67 per cent of the non-Indians liked least other non-Indian schoolmates. The "repulsion" pattern was slightly different for boys than for girls. For example, the boys liked least certain other boys, whereas the girls had least liking for certain students of either sex. The Indian girls were likely to have antipathy toward certain non-Indian girls, and to a lesser degree, toward particular Indian boys, while non-Indian girls tended to have antipathy towards boys and girls of similar non-Indian background.

These findings clearly indicate that the likes and dislikes of the white children were oriented toward their own group, whereas the likes of the Indian children were oriented toward the in-group and their dislikes toward the out-group. What this suggests is that a

majority of the non-Indian respondents derived their gratifications and frustrations from their own group, while a majority of the Indian respondents derived their gratifications from their own group and frustrations from the non-Indian group. On the basis of this evidence, it is perhaps safe to assume that the high physical visibility of the Indian, coupled with frustrating or differentiating feedback from the non-Indians is likely to have the net effect of heightening the Indian's sense of ethnic identity.

The tendency toward limited inter-ethnic friendships was not accompanied by any serious feelings of intolerance on the part of either group. Evidence derived from the students' responses to a slightly modified version of the Bogardus social distance scale suggests that the two ethnic groups held mutually favored attitudes toward each other. Specifically, approximately 52 per cent of the white children endorsed the category of "would have (Indians) as close friends." Only one white student indicated that he "would marry" an Indian, but none endorsed the extreme categories of "would keep (Indians) from living in my town," or "would debar (Indians) from Canadian Citizenship." In contrast about 51 per cent of the Indian children indicated that they "would marry" Canadians. And just as their non-Indian counterparts, none of the Indian students endorsed the two extremely negative categories as may be applied to majority group members. In this connection, it is likely that the small size of the Indian group is, at least in part, responsible for a tolerant attitude among the majority group children.[6]

Self-Conceptions. Analysis of responses to the question "Who am I?" (where each subject was asked to list 10 statements describing himself) indicates that 60 per cent of the Indian students, as compared to 40 per cent of the non-Indian, used primarily consensual rather than subconsensual statements for characterizing self.[7] (See Exhibit A for a sample list of statements describing self.) Following Kuhn and McPartland's reasoning, these differences in self-identifications reflect variations in the ways in which the Indian and the white children "have cast their lot within the range of reference groups in society."[8] More significant perhaps is the finding that approximately 60 per cent of the Indian students identified with their ethnic group, whereas only 7 per cent of the non-Indians identified either with the larger Canadian society or with a particular subgroup. The saliency of ethnic identification as a component of the self-conception among the Indian children is demonstrated by the fact that it tended to be listed first among statements characterizing self. It is possible that the in-group orientation of the Indian children in this particular school sitation acted as much a cause as an effect of ethnic identification.

Exhibit A

A SAMPLE OF FOUR SETS OF STATEMENTS LISTED IN ANSWER TO THE QUESTION "WHO AM I?"

Set I: By on Indian Male

1. I am a Canadian Indian.
2. I am a student trying to get a better education.
3. I am an average student.
4. I am a person who tries to get along with others, particularly with those who are non-Indian.
5. I am a person who can become easily irritated.
6. I am a person who dislikes any snobbery towards me.
7. I would like to some day see the Canadian Indian equal to every other Canadian.
8. I am a person who can be at times quite easy to get along with, but at times I can be quite moody.

Set II: By an Indian Female

1. A grade twelve student.
2. An Indian girl trying to make something of herself.
3. A student trying to go through grade 12 and win a scholarship to University.
4. A teen-ager anxious for a happy school life.
5. A loving daughter who wants to make her mother proud and happy.
6. A girl who wants to set an example for her younger sisters.
7. A friend who wants to do anything to help a friend.
8. A girl who is self-conscious of her dark complexion and height but tries to pretend not to be.
9. A girl whose dream is to help make some unhappy person happy.
10. A girl who dreams but won't get far at the rate she is going.

Set III: By a Non-Indian Male

1. Student of "....." School.
2. 16 years old.
3. Average student.
4. A person who likes sports.
5. Member of an average family.
6. Don't mind school.
7. Height five and one-half feet.
8. Canadian citizen.
9. Person who doesn't like show-offs.
10. I am easy to please.

Set IV: By a Non-Indian Female

1. I am a grade 10 student.
2. I am an average student in school.
3. I am 15 years old and live in "....." City.
4. I am a girl who likes sports.
5. I am a girl who works on week-ends.
6. I am a girl who studies about one hour each night.
7. I am very dull in shorthand.
8. I am a student of '....." School.
9. I am a girl who gets along with her family.
10. I am an aunt to many nieces and nephews.

Compared to the male, the Indian female was less likely to use consensual statements for characterizing self. In this respect, she was more similar to the non-Indian children than to the Indians of the opposite sex. Also, the saliency of Indian identity was slightly higher among the females than the males, and among the high occupational aspirants than the low ones.[9] There was no appreciable difference between the Indian and the non-Indian students in their self-identification by sex or age, although girls in general tended to identify their sex, and to a lesser degree their age more frequently than boys.

The findings from this study further indicate that approximately one-fourth of the Indian children had as a part of their subjective definitions of identity a component reflecting aspirations to go to college or to secure white collar occupations.[10] (See Exhibit A) In contrast, only one non-Indian child had such a general self-attitude. This is a curious finding because a larger proportion of the non-Indian than the Indian students aspired to white collar occupations and a college career.[11] The question here is why have some of the *Indian* rather than the non-Indian students *internalized* high occupational aspirations? The following factors are suggested as possible antecedent correlates of the aspirational component of self-conception among Indians: (1) The self-awareness of the Indian children has probably led some of the high aspirers to internalize that role. (2) the purposive encouragement which these subjects receive from, among others, governmental agents dealing with Indian affairs has probably affected the self-conceptions of some of them. (3) The increased opportunities for Indians to go to college and the greater significance for them, as Indians, in attempting to achieve upward social mobility in the larger society might have also affected their role definitions. Further research is needed to determine precisely how these and possibly other factors combine to affect the identity of the Indian children.

Evidence on identifications of these respondents was also derived from responses to the following question: "From among the people you have known or heard of, whom do you admire most?" The differences between the Indian and the white students in their listings of people whom they admired most are worthy of note. For example, there was a slightly stronger tendency among the Indian children to admire friends and professionals who were mostly teachers or clergy. The non-Indian children, on the other hand, had a slightly stronger tendency to admire family members, and military and political leaders. To the extent that these differences are significant, one may say that the Indian child maintains his identity more through his peer group than his family or home community. Additionally, the Indian

child's stronger tendency to admire teachers and clergy may derive from the long history of social contact between these professionals and the Indian community.

Discussion and Conclusions

Although some people assume that school integration eliminates the self-awareness of minority group members and consequently minority status, it may be argued that such a result is doubtful if integration is accompanied by feedback which differentiates, or is perceived to differentiate, between the majority and the minority groups. Self-awareness has its origins in the social processes which develop not only between the minority and the dominant groups, but also within the minority group itself.[13] Thus forced or voluntary segretation of a minority group is likely to restrict or formalize inter-ethnic relations and correspondingly enhance the self-awareness of minority group members. Also, self-awareness is likely to be salient under conditions of intense in-group interaction even if physical segregation is limited.

The conditions of the Indian children's high school education, including their high visibility, segregated boarding facilities, and patterns of selective association, have evidently contributed to the retention of their Indian identity. Nevertheless, the findings from this study strongly suggest that the middle class setting of the school studied has contributed to the internalization among some of the Indian students of the role of high aspirer. Accordingly, to the extent that a school channelizes the self-awareness of minority group members into a socially "desirable" role (such as that of a high aspirer), then, at least to that extent, it serves an important adjustive function.

In naming their best friends, the Indian and non-Indian children were generally, although not entirely, in-group oriented. Significantly, orientation toward the in-group did not produce any attitudes of intolerance or friction between the two groups. In this connection, it appears that the peer group is a crucial agent in the social adjustment of these subjects. For the Indian children, the peer group was probably a factor in their acculturative change. Thus it is reasonable to assume that the success of the school under investigation was aided by, among other things, an Indian peer group that was responsive to the efforts of the school. The peer group is probably all that is left for these Indian children to fall back on. Therefore the school will do well to recognize the functional influence of the Indian children. There is always a fear that the peer group will adopt a set of values contrary to that of the school's. Here, too, the school will have to acknowledge the fact that the Indians are not a mere aggregate of isolated individuals but that they are a group

whose members are bound together by strong social, moral, and ethnic ties.

REFERENCES AND FOOTNOTES

*The writer wishes to thank the principal and the staff of the high school under study, the Indian Affairs Branch of the Department of Citizenship and Immigration, Edmonton, and the staff of the Indian Residential School for facilitating this research; and Mary Dwyer for her statistical assistance.

1. Baha Abu-Laban, "Social Background, School Influence, and Acculturation of Indian Youth," *Sociological Inquiry,* 36 (Winter, 1966). (In press).
2. See Raymond W. Mack, (Editor) *Race, Class, and Power,* (New York: American Book Company, 1963).
3. The interviewers included the author and a small group of upper division students who were attending the University of Alberta, Edmonton. These assistants were enrolled in a course in ethnic and minority group relations which the author offered in 1961-62, and were given some training in interviewing procedures. All of the interviews were conducted in the school under study and the average length of the interviews was a little over 30 minutes.
4. The same was stratified by academic class and sex.
5. The value of this question for revealing one's identity is discussed in Manford H. Kuhn and Thomas S. McPartland, "An Empirical Investigation of Self-Attitudes," *American Sociological Review,* 19 (Feb., 1954), pp. 68-76. The specific instructions which were given to all of the respondents read as follows: "There are ten numbered blanks on the page below. Please write ten answers to the simple question: 'Who am I?' in the blanks. Just give ten different answers to this question. Answer as if you were giving the answers to yourself, not to somebody else. Write the answers in the order that they occur to you. Don't worry about logic or importance. Go along fairly fast, for the time is limited."
6. Cf. Allison Davis, "Acculturation in Schools," in Milton L. Baron, (Editor) *American Minorities,* (New York: Alfred Knopf, 1958), pp. 446-449; George A. Lundberg and Lenore Dickson, "Selective Association Among Ethnic Groups in a High School Population," *American Sociological Review,* 17 (Feb., 1952), pp. 23-35; and Lundberg and Dickson, "Inter-Ethnic Relations in a High School Population," *American Journal of Sociology,* 58 (July, 1952), pp. 1-10.
7. Consensual categories "refer to groups and classes whose limits and conditions of membership are matters of common knowledge," E.g., "student," "girl," "husband," "oldest child," etc. Subconsensual categories, on the other hand, "refer to groups, classes, attributes, traits or any other matters which would require interpretation by the respondents to be precise or to place him relative to other people." E.g., "happy," "too heavy," "good wife," etc. Seen Kuhn and McPartland, *op. cit.,* pp 69-70.
8. *Ibid.,* p. 72.
9. Analysis of occupational aspirations was based on the children's responses to a few direct questions about their occupational plans before and after entering high school. The results of this analysis indicated that the Indian females (just as the non-Indian children) were more likely than the Indian males to hold high occupational aspirations. Abu-Laban, *op. cit.*
10. Here again, the females were more likely than the males to express high motivation in terms of their subjectively defined identifications.
11. Approximately 8 out of 10 non-Indian and 6 out of 10 Indian students were high aspirers. For a brief description of the method of investigating occupational aspirations, see footnote 9.
12. As a component of the self-conception, self-awareness is obviously a social product. For a discussion of the development and the sociological significance of the self-conception, see George Herbert Mead, *Mind, Self, and Society,* (Chicago: The University of Chicago Press, 1934); and Charles H. Cooley, *Human Nature and the Social Order,* (New York: Charles Scribner's Sons, 1922).

BOOK REVIEW

A History of Public Education in British Columbia
By F. Henry Johnson

(279 pp. Vancouver: Publications Centre, University of British Columbia, 1964, $6.50)

One ought not, I suppose, to criticize pioneers, and the book under review is certainly a pioneer work. It is the first history of provincial education in western Canada, and it is hoped that others will follow. Unfortunately, Dr. Johnson's book is not a particularly good model of what a history of education should be. It suffers from a general lack of editing and could do with a thorough and careful re-reading for consistency and correctness in capitalization, punctuation, footnoting, and the use of percentages and numbers, to mention only the four weakest areas. A review of almost any standard reference on the mechanics of historical writing would have helped considerably. The fact that, apart from Chapters 1 to 4, each chapter was read separately by one or more individuals, none of whom were apparently professional historians, contributes to the book's unevenness.

The book also suffers from a provincialism unbecoming to what is purported to be a serious historical study. It is not customary to refer to "our British Columbia history" (p. 25); "British Columbia's history" will do. Statements which pay tribute to local heroes or to successful local movements are difficult to resist, but the reviewer submits the following observations are more appropriate in a commemorative brochure or pamphlet than a history book:

> The University today can point with pardonable pride to a record of student contribution to the development of its campus, unmatched by any other Canadian university (p. 196);
>
> Victoria College, although a small institution offering only the first two years of university work, had established a reputation for good teaching and sound scholarship (p. 202);
>
> In the field of adult education the University of British Columbia has led all universities in Canada (p. 235);
>
> To the credit of the British Columbia Teachers' Federation it can be said that its leaders and members have striven unselfishly to win for teachers status and respect as members of a profession in the truest sense of the term (pp. 253-54).

What Dr. Johnson writes may, of course, be true, but his book does not offer evidence to support these and similar statements. Partly responsible for the book's provincialism is the fact that approximately one-third of it (Part Four) deals with "Modern Developments," i.e., educational developments after World War II.

It is difficult to judge events in which one has been a participant, or in which one's colleagues and friends have been involved, without lauding everything and everyone. The book brings together a mass of significant data and in an invaluable contribution to what Dr. Johnson correctly refers to as "Clio's neglected child," the history of education. It is a pity, however, that the work is marred by loose scholarship in the technique of presentation and the documentation of judgments.

The book is divided into four parts: the pre-provincial period to 1872; the early provincial period to 1924; the year in which the important Putman-Weir royal commission on education was established; the period of "Problems, Reports and Reforms" to 1946; and the post-World War II period. Attention is given to all aspects of education at all levels, including the university, adult education, and the development of the British Columbia Teachers' Federation. The sources used are primarily government reports and statutes, university theses, and reports of educational developments in several periodicals and two newspapers, the *British Colonist* and the *Vancouver Province*. There is a good account of educational beginnings, in particular how British Columbia managed to avoid separate schools in the development of its educational system. The treatment of schooling for minorities (Roman Catholics, Indians, and Doukhobors) is generally superficial, however. One wonders why no mention was made of the education of the Oriental in British Columbia, particularly in the light of the forced evacuation of the Japanese during World War II. On the other hand, the account of the school-centralization movement is excellent, as is the description of how teacher education evolved from its primitive beginnings in the early high school to its present status within the University. The Appendix contains a list of the ministers of education from 1891 to the present, and there is a very good Index. "A Selected Bibliography" rounds out this work.

M. R. Lupul

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